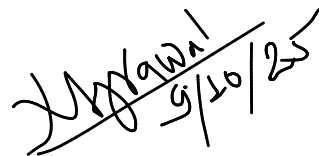


**Syllabus / Curriculum of Anatomy Subject in**  
**1<sup>st</sup> MBBS at the MPMSU Jabalpur M.P.**

As per National Medical Commission  
Guidelines No. D-11011/500/2024-AcademicCell (e 8284443)  
Government of India, New Delhi, 12-09-2024

1. Scheme of marks / Passing criteria for R-23 and R-24
2. Assessment criteria
3. Internal Assessment distribution in detail for R-23
4. Internal Assessment distribution in detail for R-24
5. Question Paper wise distribution of syllabus
6. Theory Question Paper format
7. Model Theory Question Paper
8. Practical Marks Distribution (OSPE-OSCE) in details
9. Distribution of Subject Wise Teaching Hours
10. Competency/Topic –As per CBME Guidelines
11. Recommended Books
12. Contributors Name
13. Remark



Chairman  
Adhoc Board of Studies  
Pre-Clinical Medical Faculty  
MPMSU Jabalpur

**1. Scheme of marks / Passing criteria for  
R-23 (Batch 2019 to 2023) and R-24 (Batch 2024 onwards)**

| Phase of Course        | Theory       | Practicals | Passing criteria                                                                                               |
|------------------------|--------------|------------|----------------------------------------------------------------------------------------------------------------|
| Phase-I MBBS           |              |            | Mandatory to get 40% marks separately in theory and in practicals; and totally 50% for theory plus practicals. |
| Anatomy- 2 papers      | Paper 1- 100 | 100        |                                                                                                                |
|                        | Paper 2 -100 |            |                                                                                                                |
| Physiology- 2 papers   | Paper 1- 100 | 100        |                                                                                                                |
|                        | Paper 2 -100 |            |                                                                                                                |
| Biochemistry- 2 papers | Paper 1- 100 | 100        |                                                                                                                |
|                        | Paper 2- 100 |            |                                                                                                                |
|                        |              |            |                                                                                                                |

## 2. Assessment Criteria :

**Eligibility to appear for Professional examinations the performance in essential components of training are to be assessed, based on following three components:**

**(a) Attendance :-** There shall be a minimum of 75% attendance in theory and 80% attendance in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase -the learner must have 75% attendance in theory and 80% attendance in practical in each phase of instruction in that subject..

**(b) Internal Assessment (IA):** Internal assessment shall be based on day-to-day assessment. For subjects taught in more than one phase, there shall be IA in every phase in which the subject is taught. It shall relate to different ways in which learners participate in the learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/ problem solving exercise, participation in project for health care in the community, Quiz, Certification of competencies, museum study, log books, SDL skills etc.

Internal assessment should have both subjective and objective assessment. Internal assessment shall not be added to summative assessment. However, internal assessment marks in absolute marks should be displayed under a separate column in a detailed marks card.

For R -24 the internal assessment marks for each subject will be out of 100 for theory and out of 100 for practical/clinical. For R – 23 the internal assessment marks for each subject will be out of 500 for theory and out of 500 for practical/clinical. For subjects that teach in more than one phase, cumulative IA to be used as eligibility criteria. The final cumulative marks are to be used for eligibility.

### **(c) Certifiable Competencies achieved:**

1. Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.
2. Regular periodic examinations shall be conducted throughout the course. There shall be no less than three theory and practical internal assessment examinations in each subject of phase 1 &II, and this mandatorily includes pre-university examination. The pattern of Pre University Exam must be same as the University Exam. Log book (including required skill certifications) to be assessed and marks given from 10-20% in internal assessment.

3. **Learners must secure at least 50% of the total marks (combined in theory and practical / clinical; and minimum 40% in theory and practical separately) for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.**
4. The results of internal assessment should be intimated to students at least once in 3 months and as and when a student wants to see the results.

**(d) Remedial measures:**

A student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below

**During the course:** If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures. These students should be provided remedial measures as and when needed to improve IA. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete the remedial measures and it should be documented. In spite of all above measures, if student is still not meeting the criteria to be eligible for regular exam he shall be offered remedial for the same batch supplementary exam. For attendance, he will be allowed remedial measures **ONLY IF** attendance is more than 60% for each component.

**At the end of phase:** If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book at the end of regular classes in a phase, the student is detained to appear in regular university examination of that batch.

Remedial classes can be planned for students missing regular classes on genuine grounds, thus ensuring that all certifiable competencies are achieved.

Students who have less than 75% attendance in theory and 80% attendance in practical cannot appear for University examination, however; they may appear for Supplementary examination provided they attend the remedial classes organised between University and Supplementary exam. **Students who have attendance 60% or above shall be eligible for such remedial classes.**

### 3. Internal Assessment Marks Distribution for R-23 applicable for batch 2019 to 2023

| Year & Batch | Internal Assessment<br>(Theory) | Internal Assessment<br>(Practical) |
|--------------|---------------------------------|------------------------------------|
| 2019 to 2023 | 500                             | 500                                |

| DEPARTMENT OF Anatomy/Physiology/Biochemistry |                 |                             |                |                               |                                       |                              |                        |              |                     |                   |       |
|-----------------------------------------------|-----------------|-----------------------------|----------------|-------------------------------|---------------------------------------|------------------------------|------------------------|--------------|---------------------|-------------------|-------|
| Faculty : MBBS                                |                 | Year/Phase- I               |                |                               |                                       | Date : dd/mm/yyyy            |                        |              |                     |                   |       |
| Roll No.                                      | Name of Student | Formative Assessment Theory |                |                               | Continuous Internal assessment Theory |                              |                        |              |                     |                   | Total |
|                                               |                 | 1st PCT Theory              | 2nd PCT Theory | Prelims Theory (Paper I & II) | Home Assignmen t                      | Continuou s Class Test (LMS) | Seminar                | Museum study | Library assignments | Attendance Theory |       |
|                                               |                 | 100                         | 100            | 200                           | 15                                    | 30                           | Self Directed Learning |              |                     | 10                |       |
|                                               |                 |                             |                |                               |                                       |                              |                        |              |                     |                   |       |
|                                               |                 |                             |                |                               |                                       |                              |                        |              |                     |                   |       |
|                                               |                 |                             |                |                               |                                       |                              |                        |              |                     |                   |       |

| Name of Institute :                                                |          |                 |                                                  |                                                    |                   |                                                                                |                     |                  |          |                                  |                        |       |
|--------------------------------------------------------------------|----------|-----------------|--------------------------------------------------|----------------------------------------------------|-------------------|--------------------------------------------------------------------------------|---------------------|------------------|----------|----------------------------------|------------------------|-------|
| Department of Anatomy/Physiology/Biochemistry                      |          |                 |                                                  |                                                    |                   |                                                                                |                     |                  |          |                                  |                        |       |
| Faculty : MBBS                                                     |          | Year/Phase- I   |                                                  |                                                    |                   | Date : dd/mm/yyyy                                                              |                     |                  |          |                                  |                        |       |
|                                                                    |          |                 | Formative Assessment                             |                                                    |                   | Continuous Internal Assessment (Practical)                                     |                     |                  |          |                                  |                        |       |
| S.No.                                                              | Roll No. | Name of Student | 1st PCT Practical/First Ward Leaving Examination | 2nd PCT Practical /Second Ward Leaving Examination | Prelims Practical | Log book (150)                                                                 |                     |                  |          | Journal (Record book/ Portfolio) | Attendance (Practical) | Total |
|                                                                    |          |                 |                                                  |                                                    |                   | Certifiable skill based competencies (Through OSPE/OSCE/Spots/Exercise/Other ) | AETCOM competencies | SVL Lab activity | Research |                                  |                        |       |
|                                                                    |          |                 |                                                  |                                                    |                   |                                                                                |                     |                  |          |                                  |                        |       |
|                                                                    |          |                 | 100                                              | 100                                                | 100               | 60                                                                             | 30                  | 40               | 20       | 40                               | 10                     | 500   |
|                                                                    |          |                 |                                                  |                                                    |                   |                                                                                |                     |                  |          |                                  |                        |       |
|                                                                    |          |                 |                                                  |                                                    |                   |                                                                                |                     |                  |          |                                  |                        |       |
|                                                                    |          |                 |                                                  |                                                    |                   |                                                                                |                     |                  |          |                                  |                        |       |
| Professor & Head<br>Department of _____<br>Name of Institute _____ |          |                 |                                                  |                                                    |                   |                                                                                |                     |                  |          |                                  |                        |       |

**4. Internal Assessment Marks Distribution**  
**for R – 24 applicable for batch 2024 and onwards**

| Year & Batch   | Internal Assessment<br>(Theory) | Internal Assessment<br>(Practical) |
|----------------|---------------------------------|------------------------------------|
| 2024 & onwards | 100                             | 100                                |

**Internal Assessment – Theory: 100 marks**

| S.No. | Headings under which Internal assessment will be done | Marks in percentage % of total internal assessment marks | Total Internal Assessment Mark |
|-------|-------------------------------------------------------|----------------------------------------------------------|--------------------------------|
| 1     | PCT                                                   | 10                                                       | 100                            |
| 2     | 1 <sup>st</sup> Sessional Exam                        | 20                                                       |                                |
| 3     | Pre University                                        | 40                                                       |                                |
| 4     | SDL<br>(Library, Home assignment,<br>Museum study)    | 20                                                       |                                |
| 5     | Log Book (ECE , AETCOM)                               | 10                                                       |                                |

**Internal Assessment – Practical: 100 marks**

| S.No. | Headings under which Internal assessment will be done | Marks in percentage % of total internal assessment marks | Total Internal Assessment Mark |
|-------|-------------------------------------------------------|----------------------------------------------------------|--------------------------------|
| 1     | PCT                                                   | 10                                                       | 100                            |
| 2     | 1 <sup>st</sup> Sessional Exam                        | 20                                                       |                                |
| 3     | Pre University                                        | 20                                                       |                                |
| 4     | OSPE                                                  | 10                                                       |                                |
| 5     | SEMINAR                                               | 10                                                       |                                |
| 6     | JOURNALS<br>(Gross Anatomy, Histology,<br>Embryology) | 20                                                       |                                |
| 7     | LOG BOOK                                              | 10                                                       |                                |

## 5. Question Paper wise distribution of syllabus -

### UNIVERSITY EXAMINATION

There shall be two examinations annually (Main and Supplementary) conducted

#### A. Theory: 200 Marks

There shall be two theory papers of 100 marks each and duration of each paper will be of 3 hours. Distribution of chapters for Paper I and II with weightage of marks for University Examination. \*The topics assigned to the different papers are generally evaluated under those sections. However, a strict division of the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.

### **SCHEME OF EXAMINATION: HUMAN ANATOMY**

| <b>PAPER - I ( Human Anatomy)</b> |                                                                   |              |
|-----------------------------------|-------------------------------------------------------------------|--------------|
| <b>S.No</b>                       | <b>Topics</b>                                                     | <b>Marks</b> |
| 1                                 | Head & Neck with relevant Embryology and Histology                | 25           |
| 2                                 | Brain ,Spinal Cord with relevant Embryology and Histology         | 15           |
| 3                                 | Upper Limb                                                        | 20           |
| 4                                 | Thorax including diaphragm with relevant Embryology and Histology | 20           |
| 5                                 | General anatomy                                                   | 20           |
| 6                                 | General Embryology                                                |              |
| 7                                 | General Histology                                                 |              |
|                                   | <b>TOTAL MARKS</b>                                                | <b>100</b>   |

| <b>PAPER - II ( Human Anatomy)</b> |                                                          |              |
|------------------------------------|----------------------------------------------------------|--------------|
| <b>S.No.</b>                       | <b>Topics</b>                                            | <b>Marks</b> |
| 1                                  | Abdomen with relevant Embryology and Histology           | 35           |
| 2                                  | Pelvis & Perineum with relevant Embryology and Histology | 25           |
| 3                                  | Lower Limb                                               | 30           |
| 4                                  | Genetics                                                 | 10           |
| 5                                  | AETCOM                                                   |              |
|                                    | <b>TOTAL MARKS</b>                                       | <b>100</b>   |

मध्य प्रदेश आयुर्विज्ञान विश्वविद्यालय जबलपुर के अधिसूचना क्रमांक / म. / प्र. / आ. / वि. / वि. / परीक्षा /2025 / 4431 जबलपुर दिनांक 01/08/2025 के अनुसार परीक्षा प्रश्न पत्र का प्रारूप निम्नानुसार निर्धारित किया गया है -

2. सभी सदस्यों द्वारा MBBS कोर्स हेतु नवीन प्रश्न पत्र प्रारूप प्रस्तावित कर आगामी सभी नवीन (R-24 बैच) एवं (R-23 बैच) MBBS कोर्स की परीक्षाओं में प्रश्न पत्र को अपनाने हेतु निर्णय लिया गया है।

| S.No.        | Question Type                                                                                                                                                                                                 | No. of Question | Marks in each question | Total Marks |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------|-------------|
| 01           | Multiple choice Question(Scenario based)                                                                                                                                                                      | 10              | 01                     | 10          |
| 02           | Long Essay Question (structured)<br>(These Questions require comprehensive and detailed answers demonstrating in depth Knowledge and the ability of student to integrate concepts.)                           | 01              | 10                     | 10          |
| 03           | Short Answer Question (Including 01 AETCOM based)<br>(These Questions require concise yet comprehensive explanation of specific asked topic.)                                                                 | 05              | 07                     | 35          |
| 04           | Applied Questions<br>(These Questions present an applied knowledge based clinical scenario, case study or practical situation giving students a chance to apply theoretical knowledge into clinical context.) | 05              | 05                     | 25          |
| 05           | Reasoning Questions-<br>These Question test students ability to explain why or how a particular phenomenon occurs, student should provide a scientific basis of Justifications.                               | 05              | 04                     | 20          |
| <b>Total</b> |                                                                                                                                                                                                               |                 |                        | <b>100</b>  |

## 6. Theory Question Paper format

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |           |                           |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------|---------------------------|-------------------|
| <b>Madhya Pradesh Medical Science University, Jabalpur</b><br><b>MBBS First Professional for Admission Batch 2024</b><br><b>Subject- (New Scheme)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |           |                           |                   |
| <b>Paper-</b><br><b>Paper Code-</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                         |           |                           |                   |
| <b>Time : 3:00 Hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           | <b>Maximum Marks :100</b> |                   |
| <b>Instructions:</b><br><i>a) All questions are compulsory</i><br><i>b) Draw diagrams wherever necessary</i><br><i>c) Answers of Questions and Sub questions must be written strictly according to the serial order of question paper.</i><br><i>d) MCQ has to be answered in theory answer book</i><br><i>e) Please write MCQ answer neatly and in serial order with black or blue pen in brackets for example: - 1. (a) 2. (b)</i><br><i>f) MCQ has to be answered only once, any kind for repetition or cutting or erasing or whitener will be consider as malpractice, Such answers will not be counted in the marks and action will be taken according to UFM rules of University</i><br><i>g) Subjective Answer should be answered in up to 30 words per marks. For example, if a question having 2 marks answer should be answered in up to 60 words.</i><br><i>h) Student can answer the question in both Hindi &amp; English language.</i><br><i>i) Questions in English language will in stand valid in case of any discrepancy in Hindi translation.</i> |                                         |           |                           |                   |
| <b>Q. 1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Total MCQs : 10 (Scenario Based)</b> |           |                           | <b>10 X1 = 10</b> |
| <b>1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>3</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>6</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>7</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>8</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>9</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |
| <b>10</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |           |                           |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>a.</b>                               | <b>b.</b> | <b>c.</b>                 | <b>d.</b>         |

|            |                                           |                 |
|------------|-------------------------------------------|-----------------|
| <b>Q.2</b> | <b>Long Answer Questions (Structured)</b> | <b>01X10=10</b> |
| <b>a.</b>  |                                           |                 |

|           |                                                            |                 |
|-----------|------------------------------------------------------------|-----------------|
| <b>3</b>  | <b>Short Answer Questions (Including 01 AETCOME Based)</b> | <b>05X07=35</b> |
| <b>a.</b> |                                                            |                 |
| <b>b.</b> |                                                            |                 |
| <b>c.</b> |                                                            |                 |
| <b>d.</b> |                                                            |                 |
| <b>e.</b> |                                                            |                 |

|            |                          |                 |
|------------|--------------------------|-----------------|
| <b>Q.4</b> | <b>Applied Questions</b> | <b>05X05=25</b> |
| <b>a.</b>  |                          |                 |
| <b>b.</b>  |                          |                 |
| <b>c.</b>  |                          |                 |
| <b>d.</b>  |                          |                 |
| <b>e.</b>  |                          |                 |

|            |                            |                 |
|------------|----------------------------|-----------------|
| <b>Q.5</b> | <b>Reasoning Questions</b> | <b>05X04=20</b> |
| <b>a.</b>  |                            |                 |
| <b>b.</b>  |                            |                 |
| <b>c.</b>  |                            |                 |
| <b>d.</b>  |                            |                 |
| <b>e.</b>  |                            |                 |

## 7. Model Theory Question Paper

### Pre University Examination- Paper I

Max Marks -100

Time -10.00 am to 1.00 PM

**Note :-** 1. Attempt all questions in serial order.  
2. Draw well labeled diagrams where ever necessary.

#### Q1. Multiple Choice Question

10 x 1 = 10

**A. Pressure on hook of hamate when hand is hyperextended will damage**

- a) Ulnar nerve                      b) Radial nerve    c) Median nerve                      d) Musculocutaneous nerve

**B. Condition in which arm is adducted and medially rotated and forearm is extended and pronated**

- a) Erb's palsy                      b) Klumpke's palsy                      c) Ulnar nerve injury                      d) Median nerve injury

**C. Interosseous membrane of forearm is pierced by**

- a) Brachial artery                      b) Anterior interosseous artery  
c) Posterior interosseous artery                      d) Ulnar recurrent artery

**D. Inferior wall of the orbit is formed by all except**

- a) Maxilla                      b) Palatine                      c) Zygomatic                      d) Ethmoid

**E. Name the muscle of mastication which spasm can cause dislocation of mandible by pulling the disc anterior to articular tubercle .**

- a) Buccinator                      b) Masseter                      c) Lateral pterygoid                      d) Temporalis

**F. The parasympathetic secretomotor fibers to parotid traverse through the following except-**

- a) Otic ganglion                      b) Tympanic plexus                      c) Greater petrosal nerve                      d) Auriculo temporal nerve

**G. Pineal gland forms which boundary of 3<sup>rd</sup> ventricle**

- a) Floor                      b) Anterior wall                      c) Posterior wall                      d) Roof

**H. While doing thoracocentesis it is advisable to introduce needle in the intercostal space along –**

- a) Upper border of rib                      b) Lower border of rib    c) In the center of space    d) In the anterior part of space

**I. II<sup>nd</sup> Constriction in oesophagus is seen at the following site**

- a) Where it crosses left bronchus                      b) Crossing of aorta  
c) At pharyngo esophageal junction                      d) where it pierces diaphragm

**J. True about sison's fascia/ supra pleural membrane are all except**

- a) Sub clavian vessels arches over it                      b) Attached to transvers process of C7 vertebra  
c) Develops from scalenus anterior                      d) Attached to inner border of 1<sup>st</sup> Rib

**Q2. Long Answer Question****1 X 10 = 10**

Describe cavernous sinus under following headings –

- a) General information , b) Structure passing through the sinus, c) Tributaries,  
d) Communications , e) Applied aspect

**Q3. Short Answer Question****5 X 7 = 35**

- A. Write about internal capsule of brain with its blood supply.
- B. Submandibular gland its relations and secretomotor pathway
- C. Arterial supply of heart
- D. Describe shoulder joint under following headings- Type, capsule and ligaments and rotator cuff
- E. What is the role of indian medical graduate

**Q4. Applied Question****5 X 5 = 25**

- A. Boundaries , contents and clinical importance of pyriform fossa
- B. Typical intercostal nerve and its clinical importance
- C. Carpal tunnel syndrome
- D. Microanatomy of Lymphoid tissue
- E. Lateral medullary syndrome

**Q5. Reasoning Question****5 X 4 = 20**

- A. How portal circulation is different from normal circulation
- B. Explain the anatomical basis of Peau d' orange appearance
- C. Why does the lung have bronchopulmonary segments, and what is their clinical significance
- D. How do the various parts of tongue develop
- E. What is blood brain barrier and how it works.

## Pre University Examination - Paper II

Max Marks -100

Time -10.00 am to 1.00 PM

**Note :-** 1. Attempt all questions in serial order.

2. Draw well labeled diagrams where ever necessary.

### Q1. Multiple Choice Question

10 x 1 = 10

**A. A football player sustains an injury leading to pain and swelling in the popliteal fossa. Which structure is most likely compressed**

- a. Tibial nerve                      b. Popliteal artery                      c. Small saphenous vein                      d. Common fibular nerve

**B. A 45-year-old man presents with foot drop after a car accident. Which nerve is most likely injured**

- a. Tibial nerve                      b. Femoral nerve                      c. Common peroneal nerve                      d. Obturator nerve

**C. About posterior cruciate ligament true statement is**

- a. Prevent posterior displacement of tibia                      b. Attaches to lateral condyle                      c. Intra synovial                      d. Inserted on medial side of medial femoral condyle

**D. Which of the following tendon passes below the shelf like bony projection extending medially from anterosuperior surface of calcaneum**

- a. Tibialis anterior                      b. Tibialis posterior                      c. Flexor digitorum longus                      d. Flexor hallucis longus

**E. Root of the mesentery is crossed by**

- a. Horizontal part of duodenum                      b. Left gonadal vessels                      c. Left ureter                      d. Superior mesenteric artery

**F. In rectus sheath which branch of aorta make anastomosis with superior epigastric artery**

- a. Subclavian artery                      b. External iliac artery                      c. Internal iliac artery                      d. External carotid artery

**G. Which of the following structure in the spermatic cord is not at risk of injury during vasectomy**

- a. Testicular artery                      b. Cremasteric artery                      c. Genital branch of genito femoral nerve                      d. Ilioinguinal nerve

**H. Urogenital diaphragm is made up of the following except**

- a. Deep transverse perineal membrane                      b. Perineal membrane                      c. Colle's fascia                      d. Sphincter urethrae

**I. In pudendal nerve block infiltration of local anaesthetic into pudendal canal with a needle directed towards**

- a. Anterior superior iliac spine                      b. Posterior superior iliac spine                      c. Ischial spine                      d. Pubic tubercle

**J. The following structure are felt on per rectal examination except**

- a. Bulb of penis                      b. Ureter                      c. Anorectal ring                      d. Urogenital diaphragm

Q2. Long Answer Question

1 X 10 = 10

Describe pancreas under following headings –

a) Location and parts , b) Relations , c) Arterial supply, and d) Development

Q3. Short Answer Question

5 X 7 = 35

- A. Visceral relations of spleen, its ligaments and its microanatomy
- B. Development and anomalies of kidney
- C. Describe prostate under following headings – capsule, lobes, relations and its venous drainage
- D. Describe arches of foot
- E. Femoral canal and femoral hernia

Q4. Applied Question

5 X 5 = 25

- A. Hepatorenal / Morrison's pouch
- B. Describe neurogenic bladder
- C. Descent of testis and anomalies
- D. Adductor canal and its applied anatomy
- E. Sex chromatin

Q5. Reasoning Question

5 X 4 = 20

- A. Why varicocele is more common on left side
- B. Why there is extravasation of urine to lower part of anterior abdominal wall in case of rupture of spongy urethra.
- C. What is meniscus and which one is injured more commonly and why
- D. What is trendelenburg's sign and how you elicit it.
- E. What is Caput medusae and what it indicate.

## 8. Practical Marks Distribution (OSPE-OSCE) in details

### B. Practical: 100 Marks (including Viva – voce)

There shall be Total 100 marks of practical including 20 marks for viva – voce and 80 marks for practical examination.

| <b>PRACTICAL ( Human Anatomy)</b> |                                                                                               |                                      |                                  |                                            |                                            |                                                                                      |                                                                  |              |
|-----------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------|
| Seat No.                          | <b>Spotting</b> including -<br>04 slides,<br>01 Genetics,<br>01 Clinical,<br>04 Gross Anatomy | <b>Museum specimen</b><br>(only one) | <b>Histology</b><br>(two slides) | <b>Soft Part</b><br>( Above the Diaphragm) | <b>Soft Part</b><br>( Below the Diaphragm) | <b>Embryology</b><br>(With Models) +<br><b>Radiology</b> +<br><b>Surface Marking</b> | <b>Viva - Voce</b><br>(Osteology of Above & Below the diaphragm) | <b>Total</b> |
|                                   | A                                                                                             | B                                    | C                                | D                                          | E                                          | F                                                                                    | G                                                                | H            |
| Max marks                         | 10                                                                                            | 10                                   | 15                               | 15                                         | 15                                         | 15                                                                                   | 20                                                               | 100          |

## 9. Distribution of Subject Wise Teaching Hours for Phase -1 MBBS

| Subject                                | Large group teaching | SGT/ Practical/ Tutorials/ Seminars | SDL       | Total       |
|----------------------------------------|----------------------|-------------------------------------|-----------|-------------|
| Foundation Course                      |                      |                                     |           | 80          |
| Anatomy                                | 180                  | 430                                 | 10        | 620         |
| Physiology                             | 130                  | 305                                 | 10        | 445         |
| Biochemistry *                         | 82                   | 157                                 | 10        | 249         |
| Early Clinical Exposure (ECE)**        | -                    | 27                                  | -         | 27          |
| Community Medicine                     | 20                   | 20                                  | -         | 40          |
| Family adoption Program (FAP)          | -                    | 24                                  | -         | 24          |
| (AETCOM)***                            | -                    | 26                                  | -         | 26          |
| Sports and extra-curricular Activities | -                    | -                                   | -         | 10          |
| <b>Total</b>                           | <b>412</b>           | <b>989</b>                          | <b>30</b> | <b>1521</b> |

SGT: Small group teaching, SDL: Self-directed learning

\*Including Molecular Biology

\*\*Minimum ECE hours. These hours are to be divided equally by anatomy, physiology & biochemistry.

\*\*\*AETCOM module is a longitudinal programme.

## 10. Competency/Topic –As per CBME Guidelines

# ANATOMY (CODE: AN)

| Number                                                                            | COMPETENCY<br>The student should be able to                                                                                       | Suggested Teaching Learning method | Suggested Assessment method           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------|
| <b>Anatomy (Topics = 82, Competencies = 413)</b>                                  |                                                                                                                                   |                                    |                                       |
| <b>Topic 1: Anatomical terminology - Number of Competencies (2)</b>               |                                                                                                                                   |                                    |                                       |
| AN1.1                                                                             | Describe & Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movements in the human body | LGT, Demonstration                 | Written/ Viva voce/ skills assessment |
| AN1.2                                                                             | Describe composition of bone and bone marrow                                                                                      | LGT                                | Written/ viva                         |
| <b>Topic 2: General features of bones &amp; Joints Number of Competencies (6)</b> |                                                                                                                                   |                                    |                                       |
| AN2.1                                                                             | Describe parts, types, peculiarities of each type, blood and nerve supply of bones.                                               | LGT                                | Written/ viva voce                    |
| AN2.2                                                                             | Describe the laws of ossification, epiphysis, its various types and their importance                                              | LGT                                | Written/ Viva voce                    |
| AN2.3                                                                             | Describe special features of a sesamoid bone                                                                                      | LGT, Demonstration                 | Written/ Viva voce                    |
| AN2.4                                                                             | Describe various types of cartilage with its structure & distribution in body                                                     | LGT, Demonstration                 | Written/ Viva voce                    |
| AN2.5                                                                             | Describe & demonstrate various joints with possible movements, subtypes and examples                                              | LGT, Demonstration                 | Written/ Viva voce/skills assessment  |
| AN2.6                                                                             | Explain the concept of nerve supply of joints & Hilton's law                                                                      | LGT, Demonstration                 | Written/ Viva voce                    |
| <b>Topic 3: General features of Muscle Number of Competencies (3)</b>             |                                                                                                                                   |                                    |                                       |
| AN3.1                                                                             | Classify & describe muscle tissue according to structure, size, shape, region & action                                            | LGT, Demonstration                 | Written/ Viva voce                    |
| AN3.2                                                                             | Describe parts of skeletal muscle and differentiate between tendons and aponeuroses with examples                                 | LGT, Demonstration                 | Written/ Viva voce                    |
| AN3.3                                                                             | Explain Shunt and spurt muscles with examples and role in joint movement                                                          | LGT, Demonstration                 | Written/ Viva voce                    |
| <b>Topic 4: General features of skin and fascia Number of Competencies (5)</b>    |                                                                                                                                   |                                    |                                       |
| AN4.1                                                                             | Describe different types of skin & dermatomes in body                                                                             | LGT, Demonstration                 | Written/ Viva voce                    |
| AN4.2                                                                             | Describe & demonstrate structure of skin with its appendages along with clinical anatomy                                          | LGT, Demonstration                 | Written/ Viva voce                    |
| AN4.3                                                                             | Describe structure, contents and identify modifications of superficial fascia along with fat distribution in body                 | LGT, Demonstration                 | Written/ Viva voce                    |

|                                                               |                                                                                                                    |                                   |                                                        |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------|
| AN4.4                                                         | Describe & demonstrate modifications of deep fascia with its location, function & examples                         | LGT, Demonstration                | Written/ Viva voce                                     |
| AN4.5                                                         | Explain principles of skin incisions and their surgical importance                                                 | LGT, Demonstration                | Written                                                |
| <b>Topic 5: General features of the cardiovascular system</b> |                                                                                                                    | <b>Number of Competencies (8)</b> |                                                        |
| AN5.1                                                         | Differentiate between blood vascular and lymphatic system                                                          | LGT, Demonstration                | Written/ Viva voce                                     |
| AN5.2                                                         | Differentiate between pulmonary and systemic circulation                                                           | LGT, Demonstration                | Written/ Viva voce                                     |
| AN5.3                                                         | Describe general differences between arteries, veins and sinuses                                                   | LGT, Demonstration                | Written/ Viva voce                                     |
| AN5.4                                                         | Explain functional and gross structural differences between elastic, muscular arteries and arterioles              | LGT, Demonstration                | Written/ Viva voce                                     |
| AN5.5                                                         | Describe portal system giving examples                                                                             | LGT, Demonstration                | Written/ Viva voce                                     |
| AN5.6                                                         | Describe the concept of anastomoses and collateral circulation, its different sites & significance of end arteries | LGT, Demonstration                | Written/ Viva voce                                     |
| AN5.7                                                         | Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses                           | LGT, Demonstration                | Written/ Viva voce                                     |
| AN5.8                                                         | Describe thrombosis, infarction & aneurysm                                                                         | LGT, Demonstration                | Written/ Viva voce                                     |
| <b>Topic 6: General Features of lymphatic system</b>          |                                                                                                                    | <b>Number of Competencies (3)</b> | <b>Number of competencies for certification: (NIL)</b> |
| AN6.1                                                         | Describe the components and functions of the lymphatic system                                                      | LGT, Demonstration                | Written/ Viva voce                                     |
| AN6.2                                                         | Describe structure of lymph capillaries & mechanism of lymph circulation                                           | LGT, Demonstration                | Written                                                |
| AN6.3                                                         | Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system                           | LGT, Demonstration                | Written/ Viva voce                                     |
| <b>Topic 7: Introduction to the nervous system</b>            |                                                                                                                    | <b>Number of Competencies (8)</b> | <b>Number of competencies for certification: (NIL)</b> |
| AN7.1                                                         | Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems         | LGT, Demonstration                | Written/ Viva voce                                     |
| AN7.2                                                         | List components of nervous tissue and their functions                                                              | LGT, Demonstration                | Written/ Viva voce                                     |
| AN7.3                                                         | Describe parts of a neuron and classify them based on number of neurites, size & function                          | LGT, Demonstration                | Written/ Viva voce                                     |
| AN7.4                                                         | Describe structure of a typical spinal nerve                                                                       | LGT, Demonstration                | Written/ Viva voce                                     |
| AN7.5                                                         | Describe principles of sensory and motor innervation of muscles                                                    | LGT, Demonstration                | Written                                                |
| AN7.6                                                         | Describe concept of loss of innervation of a muscle with its applied anatomy                                       | LGT, Demonstration                | Written/ Viva voce                                     |
| AN7.7                                                         | Describe various types of synapse                                                                                  | LGT, Demonstration                | Written                                                |
| AN7.8                                                         | Describe differences between sympathetic and spinal ganglia                                                        | LGT, Demonstration                | Written                                                |

| <b>Topic 8: Features of individual bones (Upper Limb)</b> |                                                                                                                                                                           | <b>Number of Competencies (4)</b> | <b>Number of competencies for certification: (NIL)</b> |                                      |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------|--------------------------------------|
| AN8.1                                                     | Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (clavicle, scapula, humerus, radius, ulna, carpal bones) |                                   | Demonstration                                          | Written/ Viva voce/ skill assessment |
| AN8.2                                                     | Demonstrate important muscle attachments on the given bone                                                                                                                |                                   | Demonstration                                          | Written/ Viva voce/ skill assessment |
| AN8.3                                                     | Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform                           |                                   | Demonstration                                          | Viva voce Practicals                 |
| AN8.4                                                     | Describe scaphoid fracture and explain the anatomical basis of avascular necrosis                                                                                         |                                   | LGT, Demonstration                                     | Viva voce                            |
| <b>Topic 9: Pectoral region</b>                           |                                                                                                                                                                           |                                   | <b>Number of competencies for certification: (NIL)</b> |                                      |
| AN9.1                                                     | Describe attachment, nerve supply & action of pectoralis major and pectoralis minor and describe clavipectoral fascia                                                     |                                   | LGT, Practical, Demonstration, Dissection              | Written/ Viva voce                   |
| AN9.2                                                     | Describe the location, extent, deep relations, structure, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast                                    |                                   | LGT,                                                   | Written/ Viva voce                   |
| AN9.3                                                     | Describe development of breast, associated age changes and congenital anomalies                                                                                           |                                   | LGT, Demonstration                                     | Written/ Viva voce                   |
| <b>Topic 10: Axilla, Shoulder and Scapular region</b>     |                                                                                                                                                                           |                                   | <b>Number of competencies for certification: (NIL)</b> |                                      |
| AN10.1                                                    | Identify & describe boundaries and contents of axilla                                                                                                                     |                                   | LGT, Practical, Demonstration, Dissection              | Written/ Viva voce/ skill assessment |
| AN10.2                                                    | Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of axillary vein                            |                                   | LGT, Practical, Demonstration, Dissection              | Written/ Viva voce/ skill assessment |
| AN10.3                                                    | Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus               |                                   | LGT, Practical, Demonstration, Dissection              | Written/ Viva voce/ skill assessment |
| AN10.4                                                    | Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage                                                                                |                                   | LGT, Practical, Demonstration, Dissection              | Written/ Viva voce/ skill assessment |
| AN10.5                                                    | Explain variations in formation of brachial plexus                                                                                                                        |                                   | LGT, Practical, Demonstration, Dissection              | Written/ Viva voce                   |
| AN10.6                                                    | Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis                                                                                  |                                   | LGT, Demonstration                                     | Written/ Viva voce                   |
| AN10.7                                                    | Describe axillary lymph nodes, areas of drainage and anatomical basis of their enlargement                                                                                |                                   | LGT, Practical, Demonstration, Dissection              | Written                              |

|         |                                                                                                                                                                                                      |                                           |                                      |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN10.8  | Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi                                                                              | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN10.9  | Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation                                                                                          | LGT, Practical, Demonstration, Dissection | Written                              |
| AN10.10 | Describe and identify the deltoid and rotator cuff muscles along with their nerve supply and clinical anatomy                                                                                        | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN10.11 | Describe & demonstrate attachment, action and clinical anatomy of serratus anterior muscle                                                                                                           | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN10.12 | Describe and demonstrate shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN10.13 | Explain anatomical basis of Injury to axillary nerve during intramuscular injections                                                                                                                 | LGT                                       | Viva voce                            |

#### **Topic 11: Arm & Cubital fossa**

**Number of Competencies (6)**

**Number of competencies for certification: (NIL)**

|        |                                                                                                                              |                                           |                                      |
|--------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN11.1 | Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii                              | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN11.2 | Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN11.3 | Describe the anatomical basis of Venipuncture of cubital veins                                                               | LGT, Demonstration                        | Written/ Viva voce                   |
| AN11.4 | Describe the anatomical basis of Saturday night paralysis                                                                    | LGT, Demonstration                        | Written/ Viva voce                   |
| AN11.5 | Identify & describe boundaries and contents of cubital fossa                                                                 | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN11.6 | Describe the anastomosis around the elbow joint                                                                              | LGT                                       | Written                              |

#### **Topic 12: Forearm & hand**

**Number of Competencies (15)**

**Number of competencies for certification: (NIL)**

|        |                                                                                                                                  |                                           |                                      |
|--------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN12.1 | Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions                   | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN12.2 | Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN12.3 | Identify & describe flexor retinaculum with its attachments                                                                      | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |

|         |                                                                                                                                          |                                           |                                      |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN12.4  | Explain anatomical basis of carpal tunnel syndrome                                                                                       | LGT, Demonstration                        | Written/ Viva voce                   |
| AN12.5  | Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved                                         | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN12.6  | Describe & demonstrate movements of thumb and muscles involved                                                                           | Practical, Demonstration                  | Written/ Viva voce/ skill assessment |
| AN12.7  | Identify & describe course and branches of important blood vessels and nerves in hand                                                    | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN12.8  | Describe anatomical basis of Claw hand                                                                                                   | LGT, Demonstration, Practical             | Written/ Viva voce                   |
| AN12.9  | Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths                                       | LGT, Practical, Demonstration, Dissection | Written/ Viva voce                   |
| AN12.10 | Explain infection of fascial spaces of palm                                                                                              | LGT                                       | Written                              |
| AN12.11 | Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions                  | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN12.12 | Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN12.13 | Describe the anatomical basis of Wrist drop                                                                                              | LGT, Demonstration                        | Written/ Viva voce                   |
| AN12.14 | Identify & describe compartments deep to extensor retinaculum and describe the boundaries and contents of anatomical snuff box.          | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN12.15 | Identify & describe extensor expansion formation                                                                                         | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |

**Topic 13: General Features, Joints, radiographs & surface marking**

**Number of competencies: (8)**

**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                                                                                         |                                           |                                      |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN13.1 | Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage                                                                                                                              | LGT, demonstration                        | Written/ Viva voce                   |
| AN13.2 | Describe dermatomes of upper limb                                                                                                                                                                                                       | LGT                                       | Written/ Viva voce                   |
| AN13.3 | Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN13.4 | Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint                                                                                                                            | LGT, Practical, Demonstration             | Written/ Viva voce/ skill assessment |

|                                                            |                                                                                                                                                                                                                                                      |                                           |                                                        |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------|
| AN13.5                                                     | Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand                                                                                                    | LGT, Practical, Demonstration             | Viva voce/ skill assessment                            |
| AN13.6                                                     | Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end and Inferior angle of the scapula                                               | Practical, Demonstration                  | Viva voce/ skill assessment                            |
| AN13.7                                                     | Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis | Practical, Demonstration                  | Viva voce/ skill assessment                            |
| AN13.8                                                     | Describe development of upper limb                                                                                                                                                                                                                   | LGT                                       | Written                                                |
| <b>Topic 14: Features of individual bones (Lower Limb)</b> |                                                                                                                                                                                                                                                      | <b>Number of Competencies (4)</b>         | <b>Number of competencies for certification: (NIL)</b> |
| AN14.1                                                     | Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (hip bone, femur, tibia fibula, tarsal bones)                                                                                       | Demonstration                             | Viva voce                                              |
| AN14.2                                                     | Identify & describe joints formed by the given bone                                                                                                                                                                                                  | LGT, Demonstration                        | Viva voce                                              |
| AN14.3                                                     | Describe the importance of ossification of lower end of femur & upper end of tibia, and explain violation of law of ossification in fibula                                                                                                           | LGT, Demonstration                        | Viva voce                                              |
| AN14.4                                                     | Identify and name various bones in the articulated foot with individual muscle attachment                                                                                                                                                            | LGT, Demonstration                        | Viva voce                                              |
| <b>Topic 15: Front &amp; Medial side of thigh</b>          |                                                                                                                                                                                                                                                      | <b>Number of Competencies (5)</b>         |                                                        |
| AN15.1                                                     | Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh                                                                                                         | LGT, Dissection, Practical, Demonstration | Written/ Viva voce/ skill assessment                   |
| AN15.2                                                     | Describe and demonstrate major muscles with their attachment, nerve supply and actions                                                                                                                                                               | LGT, Dissection, Practical, Demonstration | Written/ Viva voce/ skill assessment                   |
| AN15.3                                                     | Describe and demonstrate boundaries, floor, roof and contents of femoral triangle                                                                                                                                                                    | LGT, Dissection, Practical, Demonstration | Written/ Viva voce/ skill assessment                   |
| AN15.4                                                     | Explain anatomical basis of Psoas abscess & Femoral hernia                                                                                                                                                                                           | LGT, Demonstration                        | Written/ Viva voce                                     |
| AN15.5                                                     | Describe and demonstrate adductor canal with its contents                                                                                                                                                                                            | LGT, Demonstration                        | Written/ Viva voce/ skill assessment                   |
| <b>Topic 16: Gluteal region &amp; back of thigh</b>        |                                                                                                                                                                                                                                                      | <b>Number of Competencies (6)</b>         |                                                        |
| AN16.1                                                     | Describe and demonstrate major muscles with their attachment, nerve supply and actions.                                                                                                                                                              | Dissection, LGT, SGT, Demonstration       | Written/ Viva voce/ skill assessment                   |

|        |                                                                                                                                                                           |                                     |                                      |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------|
| AN16.2 | Describe and demonstrate structures under the cover of gluteus maximus. Also explain the anatomical basis of sciatic nerve injury during gluteal intramuscular injections | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN16.3 | Explain the anatomical basis of Trendelenburg sign                                                                                                                        | LGT, Demonstration                  | Written/ Viva voce                   |
| AN16.4 | Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions                                                                  | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN16.5 | Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh                       | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN16.6 | Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa with its clinical anatomy                                                 | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |

**Topic 17: Hip Joint**
**Number of Competencies (3)**

|        |                                                                                                                                                                                              |                                     |                                      |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------|
| AN17.1 | Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN17.2 | Describe anatomical basis of complications of fracture neck of femur                                                                                                                         | LGT, Demonstration                  | Written/ Viva voce                   |
| AN17.3 | Describe dislocation of hip joint and surgical hip replacement                                                                                                                               | LGT, Demonstration                  | Written/ Viva voce                   |

**Topic 18: Knee joint, Anterior compartment of leg & dorsum of foot**
**Number of Competencies (7)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                                                                                  |                                     |                                      |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------|
| AN18.1 | Describe and demonstrate major muscles of anterior compartment of leg with their attachment, nerve supply and actions                                                                                                            | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN18.2 | Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg                                                                        | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN18.3 | Explain the anatomical basis of foot drop                                                                                                                                                                                        | LGT, Demonstration                  | Written/ Viva voce                   |
| AN18.4 | Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, nerve supply, bursae around the knee joint along with anastomosis around the knee joint | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN18.5 | Explain the anatomical basis of locking and unlocking of the knee joint                                                                                                                                                          | LGT, Demonstration, Practical       | Written/ Viva voce                   |
| AN18.6 | Describe knee joint injuries with its applied anatomy                                                                                                                                                                            | LGT, Demonstration                  | Written/ Viva voce                   |
| AN18.7 | Explain anatomical basis of Osteoarthritis                                                                                                                                                                                       | LGT                                 | Written/ Viva voce                   |

**Topic 19: Back of Leg & Sole**
**Number of Competencies (7)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                               |                                     |                                      |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------|
| AN19.1 | Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions                                     | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN19.2 | Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg | Dissection, LGT, SGT, Demonstration | Written/ Viva voce/ skill assessment |
| AN19.3 | Explain the concept of “Peripheral heart”                                                                                                     | LGT                                 | Written/ Viva voce                   |
| AN19.4 | Explain the anatomical basis of rupture of calcaneal tendon                                                                                   | LGT                                 | Written/ Viva voce                   |
| AN19.5 | Describe factors maintaining importance arches of the foot with its importance                                                                | LGT                                 | Written/ Viva voce                   |
| AN19.6 | Explain the anatomical basis of Flat foot & Club foot                                                                                         | LGT                                 | Written/ Viva voce                   |
| AN19.7 | Explain the anatomical basis of Metatarsalgia & Plantar fasciitis                                                                             | LGT                                 | Written/ Viva voce                   |

Topic 20: General Features, Joints, radiographs & surface marking      Number of Competencies (10)  
Number of competencies for certification: (NIL)

|        |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                |                                      |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------|
| AN20.1 | Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint                                                                                                                                                                                                           | Dissection, LGT, SGT, Demonstration, Practical | Written/ Viva voce/ skill assessment |
| AN20.2 | Describe the subtalar and transverse tarsal joints                                                                                                                                                                                                                                                                                                                                                        | LGT, Demonstration                             | Written/ Viva voce                   |
| AN20.3 | Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb                                                                                                                                                                                                                                                                                          | LGT, Demonstration, Dissection, Practical      | Written/ Viva voce/ skill assessment |
| AN20.4 | Explain anatomical basis of enlarged inguinal lymph nodes                                                                                                                                                                                                                                                                                                                                                 | LGT                                            | Written/ Viva voce                   |
| AN20.5 | Explain anatomical basis of varicose veins and deep vein thrombosis                                                                                                                                                                                                                                                                                                                                       | LGT, Demonstration                             | Written/ Viva voce                   |
| AN20.6 | Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb                                                                                                                                                                                                                                                                         | LGT, SGT, Demonstration                        | Viva voce/ skill assessment          |
| AN20.7 | Identify & demonstrate important bony landmarks of lower limb: - Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular | Practical, LGT, SGT, Demonstration             | Viva voce/ skill assessment          |
| AN20.8 | Identify & demonstrate palpation of femoral, popliteal, posterior tibial, anterior tibial & dorsalis pedis arteries in a simulated environment                                                                                                                                                                                                                                                            | Practical, LGT, SGT, Demonstration             | Viva voce/ skill assessment          |

|         |                                                                                                                                                                                                                                            |                                    |                             |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------|
| AN20.9  | Demonstrate surface projection of: femoral, popliteal, dorsalis pedis, post tibial arteries, Mid inguinal point, femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins | Practical, LGT, SGT, Demonstration | Viva voce/ skill assessment |
| AN20.10 | Describe basic concept of development of lower limb                                                                                                                                                                                        | LGT                                | Viva voce                   |

### Topic 21: Thoracic cage

Number of Competencies (11)

Number of competencies for certification: (NIL)

|         |                                                                                                                                            |                                           |                                      |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN21.1  | Identify and describe the salient features of sternum, typical rib and typical thoracic vertebra.                                          | LGT, Dissection, Practical, Demonstration | Viva voce/ skill assessment          |
| AN21.2  | Identify & describe the features of atypical ribs and atypical thoracic vertebrae.                                                         | LGT, Dissection, Practical, Demonstration | Viva voce/ skill assessment          |
| AN21.3  | Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet along with its applied aspect.( Thoracic inlet Syndrome)        | LGT, Demonstration                        | Written/ Viva voce/ skill assessment |
| AN21.4  | Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles                           | LGT, Dissection, Practical, Demonstration | Written/ Viva voce/ skill assessment |
| AN21.5  | Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve                                               | LGT, Dissection, Practical, Demonstration | Written/ Viva voce/ skill assessment |
| AN21.6  | Mention origin, course and branches/ tributaries of:<br>1) anterior & posterior intercostal vessels<br>2) internal thoracic vessels        | LGT, Dissection, Practical, Demonstration | Written/ Viva voce                   |
| AN21.7  | Mention the origin, course, relations and branches of<br>1) atypical intercostal nerve<br>2) superior intercostal artery, subcostal artery | LGT, Dissection, Practical, Demonstration | Written                              |
| AN21.8  | Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints    | LGT, Demonstration, Dissection, Practical | Written/ Viva voce/ skill assessment |
| AN21.9  | Describe & demonstrate mechanics and types of respiration                                                                                  | Demonstration, Dissection, Practical      | Written/ Viva voce/ skill assessment |
| AN21.10 | Describe costochondral and interchondral joints                                                                                            | LGT, Demonstration, Dissection, Practical | Written/ Viva voce                   |
| AN21.11 | Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum                                                | LGT, Demonstration, Dissection            | Written/ Viva voce                   |

### Topic 22: Heart & Pericardium

Number of Competencies (7)

Number of competencies for certification: (NIL)

|        |                                                                                                           |                                           |                                      |
|--------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN22.1 | Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium | LGT, Demonstration, Dissection, Practical | Written/ Viva voce/ skill assessment |
| AN22.2 | Describe & demonstrate external and internal features of each chamber of heart                            | LGT, Demonstration, Dissection, Practical | Written/ Viva voce/ skill assessment |
| AN22.3 | Describe & demonstrate origin, course and branches of coronary arteries                                   | LGT, Demonstration, Dissection, Practical | Written/ Viva voce/ skill assessment |
| AN22.4 | Describe anatomical basis of ischaemic heart disease                                                      | LGT, Demonstration                        | Written/ Viva voce                   |
| AN22.5 | Describe & demonstrate the formation, course, tributaries and termination of coronary sinus               | LGT, Demonstration                        | Written/ Viva voce/ skill assessment |
| AN22.6 | Describe the fibrous skeleton of heart                                                                    | LGT                                       | Written                              |
| AN22.7 | Mention the parts, position and arterial supply of the conducting system of heart                         | LGT                                       | Written/ Viva voce                   |

### Topic 23: Mediastinum

Number of Competencies (6)

Number of competencies for certification: (NIL)

|        |                                                                                                                                                        |                                           |                                      |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN23.1 | Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus            | LGT, Demonstration                        | Written/ Viva voce/ skill assessment |
| AN23.2 | Describe & demonstrate the extent, relations and tributaries of thoracic duct and enumerate its applied anatomy.                                       | LGT                                       | Written/ Viva voce/ skill assessment |
| AN23.3 | Describe & demonstrate origin, course, relations, tributaries and termination of superior vena cava, azygos, hemiazygos and accessory hemiazygos veins | LGT, Demonstration, Dissection, Practical | Written/ Viva voce/ skill assessment |
| AN23.4 | Mention the extent, branches and relations of arch of aorta & descending thoracic aorta                                                                | LGT, Demonstration, Dissection, Practical | Written/ Viva voce                   |
| AN23.5 | Identify & Mention the location and extent of thoracic sympathetic chain                                                                               | LGT, Demonstration, Dissection, Practical | Written/ Viva voce/ skill assessment |
| AN23.6 | Describe the splanchnic nerves                                                                                                                         | LGT                                       | Written                              |

### Topic 24: Lungs & Trachea

Number of Competencies (6)

Number of competencies for certification: (NIL)

|        |                                                                                                                                                       |                                           |                                      |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN24.1 | Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy | LGT, Demonstration, Dissection, Practical | Written/ Viva voce                   |
| AN24.2 | Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate                    | LGT, Demonstration, Dissection, Practical | Written/ Viva voce/ skill assessment |

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|--------|------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------|
| AN24.3 | Describe a bronchopulmonary segment with its clinical anatomy                                        | LGT,<br>Demonstration                              | Written/ Viva voce |
| AN24.4 | Identify phrenic nerve & describe its formation & distribution                                       | LGT,<br>Demonstration                              | Written/ Viva voce |
| AN24.5 | Mention the blood supply, lymphatic drainage and nerve supply of lungs                               | LGT,<br>Demonstration,<br>Dissection,<br>Practical | Written/ Viva voce |
| AN24.6 | Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea | LGT,<br>Demonstration                              | Written            |

**Topic 25: Thorax**
**Number of Competencies (9)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                  |                                     |                             |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------|
| AN25.1 | Identify, draw and label a slide of trachea and lung                                                                                                             | LGT,<br>Demonstration,<br>Practical | Written/ skill assessment   |
| AN25.2 | Describe development of pleura, lung & heart                                                                                                                     | LGT                                 | Written                     |
| AN25.3 | Describe fetal circulation and changes occurring at birth                                                                                                        | LGT,<br>Demonstration               | Written                     |
| AN25.4 | Describe embryological basis of:<br>1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy &<br>4) tracheoesophageal fistula               | LGT                                 | Written/ Viva voce          |
| AN25.5 | Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta            | LGT                                 | Written/ Viva voce          |
| AN25.6 | Mention development of aortic arch arteries, SVC, IVC and coronary sinus                                                                                         | LGT                                 | Written/ Viva voce          |
| AN25.7 | Identify structures seen on a plain x-ray chest (PA view)                                                                                                        | LGT,<br>Demonstration,<br>Practical | Written/ Viva voce          |
| AN25.8 | Identify and describe in brief a barium swallow                                                                                                                  | LGT,<br>Demonstration,<br>Practical | Written/ Viva voce          |
| AN25.9 | Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart | Demonstration,<br>Practical         | Viva voce/ skill assessment |

**Topic 26: Skull osteology**
**Number of Competencies (7)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                          |                       |                             |
|--------|----------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|
| AN26.1 | Describe & demonstrate anatomical position of skull, Identify and locate individual skull bones in skull | LGT,<br>Demonstration | Viva voce/ skill assessment |
| AN26.2 | Describe & demonstrate the features of norma frontalis, verticalis, occipitalis, lateralis and basalis   | LGT,<br>Demonstration | Viva voce/ skill assessment |
| AN26.3 | Describe & demonstrate cranial cavity, its subdivisions, foramina and structures passing through them    | LGT,<br>Demonstration | Viva voce/ skill assessment |
| AN26.4 | Describe & demonstrate morphological features of mandible                                                | LGT,<br>Demonstration | Viva voce/ skill assessment |
| AN26.5 | Describe & demonstrate features of typical and atypical cervical vertebrae (atlas and axis)              | LGT,<br>Demonstration | Viva voce/ skill assessment |

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|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN26.6                                                 | Explain the concept of bones that ossify in membrane                                                                                                       | LGT                                       | Viva voce                            |
| AN26.7                                                 | Describe & demonstrate the features of the 7th cervical vertebra                                                                                           | LGT, Demonstration                        | Viva voce                            |
| <b>Topic 27: Scalp</b>                                 |                                                                                                                                                            | <b>Number of Competencies (2)</b>         |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                            |                                           |                                      |
| AN27.1                                                 | Describe & demonstrate the layers of scalp, its blood supply, nerve supply and surgical importance.                                                        | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN27.2                                                 | Describe emissary veins with its role in the spread of infection from extracranial route to intracranial venous sinuses                                    | LGT, Practical, Demonstration, Dissection | Written                              |
| <b>Topic 28: Face &amp; parotid region</b>             |                                                                                                                                                            | <b>Number of Competencies (10)</b>        |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                            |                                           |                                      |
| AN28.1                                                 | Describe & demonstrate muscles of facial expression and their nerve supply                                                                                 | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN28.2                                                 | Describe sensory innervation of face                                                                                                                       | LGT, Demonstration                        | Written/ Viva voce                   |
| AN28.3                                                 | Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels                                                                  | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN28.4                                                 | Describe & demonstrate branches of facial nerve with distribution                                                                                          | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN28.5                                                 | Describe cervical lymph nodes and lymphatic drainage of head, face and neck                                                                                | LGT                                       | Written/ Viva voce                   |
| AN28.6                                                 | Identify superficial muscles of face, their nerve supply and actions                                                                                       | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN28.7                                                 | Explain the anatomical basis of facial nerve palsy                                                                                                         | LGT                                       | Written                              |
| AN28.8                                                 | Explain surgical importance of deep facial vein                                                                                                            | LGT                                       | Written                              |
| AN28.9                                                 | Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN28.10                                                | Explain the anatomical basis of Frey’s syndrome                                                                                                            | LGT                                       | Written                              |
| <b>Topic 29: Posterior triangle of neck</b>            |                                                                                                                                                            | <b>Number of Competencies (5)</b>         |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                            |                                           |                                      |
| AN29.1                                                 | Describe and demonstrate the boundaries, subdivisions and contents of posterior triangle of neck                                                           | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN29.2                                                 | Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid                                                             | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |

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|--------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------|
| AN29.3 | Explain anatomical basis of Erb's & Klumpke's palsy                                                                                 | LGT, Demonstration                        | Written            |
| AN29.4 | Explain anatomical basis of wry neck                                                                                                | LGT, Demonstration                        | Written            |
| AN29.5 | Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2) scalenus anterior, 3) scalenus medius & 4) levator scapulae | LGT, Practical, Demonstration, Dissection | Written/ Viva voce |

**Topic: 30 Cranial cavity**
**Number of Competencies (5)**
**Number of competencies for certification: (NIL)**

|        |                                                                         |                                           |                                      |
|--------|-------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN30.1 | Describe the cranial fossae & identify related structures               | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN30.2 | Describe & identify major foramina with structures passing through them | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN30.3 | Describe & identify dural folds & dural venous sinuses                  | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN30.4 | Describe clinical importance of dural venous sinuses                    | LGT                                       | Written                              |
| AN30.5 | Explain effect of pituitary tumours on visual pathway                   | LGT                                       | Written                              |

**Topic 31: Orbit**
**Number of Competencies (5)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                       |                                           |                                      |
|--------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN31.1 | Describe & identify extra ocular muscles of eyeball, along with a note on its attachment, action and clinical anatomy | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN31.2 | Describe & demonstrate nerves and vessels in the orbit                                                                | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN31.3 | Describe anatomical basis of Horner's syndrome                                                                        | LGT                                       | Written                              |
| AN31.4 | Describe the components of lacrimal apparatus                                                                         | LGT                                       | Written                              |
| AN31.5 | Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus                | LGT                                       | Written                              |

**Topic 32: Anterior Triangle**
**Number of Competencies (2)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                        |                                           |                                      |
|--------|--------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN32.1 | Describe boundaries and subdivisions of anterior triangle                                              | LGT                                       | Written/ Viva voce                   |
| AN32.2 | Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |

**Topic 33: Temporal and Infratemporal regions**
**Number of Competencies (5)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                             |                                           |                                      |
|--------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN33.1 | Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae                 | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN33.2 | Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN33.3 | Describe & demonstrate articulating surface, type & movements of temporomandibular joint                    | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN33.4 | Explain the clinical significance of pterygoid venous plexus                                                | LGT                                       | Written                              |
| AN33.5 | Describe the features of dislocation of temporomandibular joint                                             | LGT                                       | Written                              |

**Topic 34: Submandibular region**
**Number of Competencies (3)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                |                                           |                                      |
|--------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN34.1 | Describe and demonstrate the superficial and deep structures, muscles, nerves, vessels, and glands in the submandibular region | LGT, Dissection, Practical, Demonstration | Written/Viva/ Skill Assessment       |
| AN34.2 | Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibularganglion      | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN34.3 | Describe the basis of formation of submandibular stones                                                                        | LGT                                       | Written                              |

**Topic 35: Deep structures in the neck**
**Number of Competencies (10)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                       |                                           |                                      |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN35.1 | Describe the parts, extent, attachments, modifications of deep cervical fascia                                                                                        | LGT                                       | Written                              |
| AN35.2 | Describe & demonstrate location, parts, borders, surfaces, relations, blood supply & applied anatomy of thyroid gland. Also describe the parathyroid glands in brief. | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN35.3 | Demonstrate & describe the origin, parts, course & branches subclavian artery                                                                                         | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN35.4 | Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins                                             | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN35.5 | Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes                                                                                   | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN35.6 | Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain                                                                     | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN35.7 | Describe the course and branches of IX, X, XI & XII nerve in the neck                                                                                                 | LGT                                       | Written                              |
| AN35.8 | Describe the anatomically relevant clinical features of Thyroid swellings                                                                                             | LGT, Demonstration                        | Written                              |
| AN35.9 | Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib                                                 | LGT                                       | Written                              |

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|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN35.10                                                | Describe the fascial spaces of neck                                                                                                                                                 | LGT                                       | Written                              |
| <b>Topic 36: Mouth, Pharynx &amp; Palate</b>           |                                                                                                                                                                                     |                                           |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                     | <b>Number of Competencies (7)</b>         |                                      |
| AN36.1                                                 | Describe and demonstrate the structures of the vestibule of the mouth and oral cavity proper.                                                                                       | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN36.2                                                 | Describe the 1) morphology, relations, blood supply and applied anatomy of palatine tonsil 2) composition of soft palate                                                            | LGT, Practical, Demonstration, Dissection | Written                              |
| AN36.3                                                 | Describe and demonstrate the muscles, nerve supply, blood supply and lymphatic drainage of the pharynx                                                                              | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN36.4                                                 | Describe the components and functions of Waldeyer's lymphatic ring                                                                                                                  | LGT                                       | Written                              |
| AN36.5                                                 | Describe the pharyngeal spaces. Also describe the boundaries and clinical significance of pyriform fossa                                                                            | LGT                                       | Written                              |
| AN36.6                                                 | Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess                                                                                    | LGT                                       | Written                              |
| AN36.7                                                 | Describe the clinical significance of Killian's dehiscence                                                                                                                          | LGT                                       | Written                              |
| <b>Topic 37: Cavity of Nose</b>                        |                                                                                                                                                                                     |                                           |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                     | <b>Number of Competencies (3)</b>         |                                      |
| AN37.1                                                 | Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply                                                                          | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN37.2                                                 | Describe location and functional anatomy of paranasal sinuses                                                                                                                       | LGT, Practical, Demonstration             | Written                              |
| AN37.3                                                 | Describe anatomical basis of sinusitis & maxillary sinus tumours                                                                                                                    | LGT                                       | Written                              |
| <b>Topic 38: Larynx</b>                                |                                                                                                                                                                                     |                                           |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                     | <b>Number of Competencies (3)</b>         |                                      |
| AN38.1                                                 | Describe & demonstrate the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx                      | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN38.2                                                 | Describe the anatomical aspects of laryngitis                                                                                                                                       | LGT                                       | Written                              |
| AN38.3                                                 | Describe anatomical basis of recurrent laryngeal nerve injury                                                                                                                       | LGT                                       | Written                              |
| <b>Topic 39: Tongue</b>                                |                                                                                                                                                                                     |                                           |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                     | <b>Number of Competencies (2)</b>         |                                      |
| AN39.1                                                 | Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN39.2                                                 | Explain the anatomical basis of hypoglossal nerve palsy                                                                                                                             | LGT                                       | Written                              |
| <b>Topic 40: Organs of hearing and equilibrium</b>     |                                                                                                                                                                                     |                                           |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                     | <b>Number of Competencies (5)</b>         |                                      |

|        |                                                                                                                   |                                           |                                      |
|--------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN40.1 | Describe & identify the parts, blood supply and nerve supply of external ear                                      | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN40.2 | Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN40.3 | Describe the features of internal ear                                                                             | LGT                                       | Written                              |
| AN40.4 | Explain anatomical basis of otitis externa and otitis media                                                       | LGT                                       | Written                              |
| AN40.5 | Explain anatomical basis of myringotomy                                                                           | LGT                                       | Written                              |

**Topic 41: Eyeball**
**Number of Competencies (3)**
**Number of competencies for certification: (NIL)**

|        |                                                                                          |                                           |                                      |
|--------|------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN41.1 | Describe & demonstrate parts and layers of eyeball                                       | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN41.2 | Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion | LGT                                       | Written                              |
| AN41.3 | Describe the position, nerve supply and actions of intraocular muscles                   | LGT, Practical, Demonstration             | Written                              |

**Topic 42: Back Region**
**Number of Competencies (3)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                           |                                           |                                      |
|--------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN42.1 | Describe and demonstrate the contents of the vertebral canal                                                              | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN42.2 | Describe & demonstrate the boundaries and contents of Suboccipital triangle                                               | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN42.3 | Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis | LGT                                       | Written                              |

**Topic 43: Head & neck Joints, Histology, Development, Radiography & Surface marking**
**Number of Competencies (9)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                             |                                           |                                      |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN43.1 | Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint                                    | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN43.2 | Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina    | LGT, Practical                            | Written/ skill assessment            |
| AN43.3 | Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland  | LGT, Practical                            | Written/ skill assessment            |
| AN43.4 | Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye | LGT                                       | Written/ Viva voce                   |

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|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------|
| AN43.5 | Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels | Practical, Demonstration | Viva voce/ skill assessment |
| AN43.6 | Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve                                                                                                                   | Practical, Demonstration | Viva voce/ skill assessment |
| AN43.7 | Identify the anatomical structures in 1) Plain x-ray skull, 2) AP view and lateral view 3) Plain x-ray cervical spine-AP and lateral view 4) Plain x-ray of paranasal sinuses                                                                                                                                                          | Practical, Demonstration | Viva voce/ skill assessment |
| AN43.8 | Describe the anatomical route used for carotid angiogram and vertebral angiogram                                                                                                                                                                                                                                                       | LGT                      | Viva voce/ skill assessment |
| AN43.9 | Identify anatomical structures in carotid angiogram and vertebral angiogram                                                                                                                                                                                                                                                            | Practical, Demonstration | Viva voce/ skill assessment |

#### Topic 44: Anterior abdominal wall

Number of Competencies (7)

##### Number of competencies for certification: (NIL)

|        |                                                                                                                                                               |                                           |                                      |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN44.1 | Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN44.2 | Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall                                                                             | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN44.3 | Describe the formation of rectus sheath and its contents                                                                                                      | LGT, Practical, Demonstration,            | Written/ Viva voce                   |
| AN44.4 | Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.                                                        | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN44.5 | Explain the anatomical basis of inguinal hernia.                                                                                                              | LGT                                       | Written/ Viva voce                   |
| AN44.6 | Describe & demonstrate attachments of muscles of anterior abdominal wall                                                                                      | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN44.7 | Describe common abdominal incisions with example and their clinical importance                                                                                | LGT                                       | Written                              |

#### Topic 45: Posterior abdominal wall

Number of Competencies (3)

##### Number of competencies for certification: (NIL)

|        |                                                                                                                                                       |                                           |                                      |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN45.1 | Describe Thoracolumbar fascia, its different layers, their attachments and extents                                                                    | LGT                                       | Written                              |
| AN45.2 | Describe & demonstrate Lumbar plexus, its root value, formation, branches and clinical anatomy (compression/ injury to the rootlets of lumbar plexus) | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN45.3 | Describe and demonstrate back muscles, nerve supply and action                                                                                        | LGT                                       | Written                              |

#### Topic 46: Male external genitalia

Number of Competencies (5)

##### Number of competencies for certification: (NIL)

|        |                                                                                                                                                                       |                            |                                      |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|
| AN46.1 | Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN46.2 | Describe parts of Epididymis                                                                                                                                          | LGT, Dissection            | Written/ Viva voce                   |
| AN46.3 | Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage)                                                                     | LGT, Dissection            | Written/ Viva voce                   |
| AN46.4 | Explain the anatomical basis of Varicocele                                                                                                                            | LGT                        | Written                              |
| AN46.5 | Explain the anatomical basis of Phimosis & Circumcision                                                                                                               | LGT                        | Written                              |

**Topic 47: Abdominal cavity**

**Number of Competencies (14)**

**Number of competencies for certification: (NIL)(NIL)**

|         |                                                                                                                                                                                                                                                                                                                     |                                           |                                      |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN47.1  | Describe & demonstrate horizontal and vertical tracing of peritoneum. Also describe boundaries and recesses of Lesser & Greater sac.                                                                                                                                                                                | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN47.2  | Name & identify various peritoneal folds & pouches with its explanation                                                                                                                                                                                                                                             | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN47.3  | Explain anatomical basis of Ascites & Peritonitis                                                                                                                                                                                                                                                                   | LGT                                       | Written                              |
| AN47.4  | Explain anatomical basis of Subphrenic abscess                                                                                                                                                                                                                                                                      | LGT                                       | Written                              |
| AN47.5  | Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)                                                                        | Dissection, LGT, SGT, DOAP                | Written/ Viva voce/ skill assessment |
| AN47.6  | Explain the anatomical basis of Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach | LGT                                       | Written                              |
| AN47.7  | Demonstrate boundaries of Calot's triangle and mention its clinical importance                                                                                                                                                                                                                                      | LGT                                       | Written                              |
| AN47.8  | Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein                                                                                                                                                                                                 | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN47.9  | Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery                                                                                                                                          | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN47.10 | Describe sites of portosystemic anastomosis, describe its applied anatomy and anatomical correlations                                                                                                                                                                                                               | LGT                                       | Written                              |
| AN47.11 | Explain the anatomic basis of hematemesis & caput medusae in portal hypertension                                                                                                                                                                                                                                    | LGT,                                      | Written/ Viva voce                   |
| AN47.12 | Describe important nerve plexuses of posterior abdominal wall                                                                                                                                                                                                                                                       | LGT                                       | Written                              |

|         |                                                                                                           |                            |                                      |
|---------|-----------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|
| AN47.13 | Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN47.14 | Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia                     | LGT                        | Written                              |

**Topic 48: Pelvic wall and viscera**
**Number of Competencies (8)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                                                                                                |                            |                                      |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|
| AN48.1 | Describe & demonstrate the position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of important male & female pelvic viscera.                                        | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN48.2 | Describe & identify the muscles of Pelvic diaphragm.                                                                                                                                                                                           | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN48.3 | Describe & demonstrate the origin, course, important relations and branches of internal iliac artery                                                                                                                                           | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN48.4 | Describe the branches of sacral plexus                                                                                                                                                                                                         | LGT                        | Written                              |
| AN48.5 | Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation | LGT                        | Written                              |
| AN48.6 | Describe the neurological basis of Automatic bladder                                                                                                                                                                                           | LGT                        | Written                              |
| AN48.7 | Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer                                                                                                                                                                  | LGT                        | Written                              |
| AN48.8 | Mention the structures palpable during vaginal & rectal examination                                                                                                                                                                            | LGT                        | Written                              |

**Topic 49: Perineum**
**Number of Competencies (5)**
**Number of competencies for certification: (NIL)**

|        |                                                                                              |                            |                                      |
|--------|----------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|
| AN49.1 | Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents)       | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill            |
| AN49.2 | Describe & identify Perineal body                                                            | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN49.3 | Describe & demonstrate Perineal membrane in male & female                                    | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN49.4 | Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa           | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN49.5 | Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure | LGT                        | Written                              |

**Topic 50: Vertebral column**
**Number of Competencies (4)**
**Number of competencies for certification: (NIL)**

|        |                                                 |     |                    |
|--------|-------------------------------------------------|-----|--------------------|
| AN50.1 | Describe the curvatures of the vertebral column | LGT | Written/ Viva voce |
|--------|-------------------------------------------------|-----|--------------------|

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|--------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|
| AN50.2 | Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN50.3 | Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)                                | LGT                        | Written/ Viva voce                   |
| AN50.4 | Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida                                  | LGT                        | Written                              |

#### Topic 51: Sectional Anatomy

Number of Competencies (2)

Number of competencies for certification: (NIL)

|        |                                                                                           |                            |                                      |
|--------|-------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|
| AN51.1 | Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane) | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |
| AN51.2 | Describe & identify the midsagittal section of male and female pelvis                     | Dissection, LGT, SGT, DOAP | Written/ Viva voce/ skill assessment |

#### Topic 52: Histology & Embryology

Number of Competencies (8)

Number of competencies for certification: (NIL)

|        |                                                                                                                                                                                                                                                                                     |                               |                           |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------|
| AN52.1 | Describe & identify the microanatomical features of Gastro-intestina system:<br>Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland                                            | LGT, Demonstration, Practical | Written/ skill assessment |
| AN52.2 | Describe & identify the microanatomical features of: Urinary system: Kidney, Ureter & Urinary bladder<br>Male Reproductive System: Testis, Epididymis, Vas deferens, Prostate & penis<br>Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord | LGT, Demonstration, Practical | Written/ skill assessment |
| AN52.3 | Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum                                                                                                                                                                                       | LGT, Demonstration, Practical | Written/ skill assessment |
| AN52.4 | Describe the development of anterior abdominal wall                                                                                                                                                                                                                                 | LGT                           | Written/ Viva voce        |
| AN52.5 | Describe the development and congenital anomalies of Diaphragm                                                                                                                                                                                                                      | LGT                           | Written/ Viva voce        |
| AN52.6 | Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut                                                                                                                                                                                                     | LGT                           | Written/ Viva voce        |
| AN52.7 | Describe the development of Urinary system                                                                                                                                                                                                                                          | LGT                           | Written/ Viva voce        |
| AN52.8 | Describe the development of male & female reproductive system                                                                                                                                                                                                                       | LGT                           | Written/ Viva voce        |

#### Topic 53: Osteology

Number of Competencies (4)

Number of competencies for certification: (NIL)

|        |                                                                                                                                                  |                               |                             |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------|
| AN53.1 | Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups | LGT, Demonstration, Practical | Viva voce/ skill assessment |
| AN53.2 | Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet                               | LGT, DOAP                     | Viva voce/ skill assessment |

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|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------|
| AN53.3 | Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis                                                                                    | LGT, DOAP | Viva voce/ skill assessment |
| AN53.4 | Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx) | LGT, DOAP | Viva voce/ skill assessment |

**Topic 54: Radiodiagnosis**
**Number of Competencies (4)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                                                   |           |                             |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------|
| AN54.1 | Describe the principles of Plain and contrast radiography, Computed Tomography, Magnetic Resonance Imaging, Positron Emission Tomography scan and Digital subtraction angiography                 | LGT       | Viva voce/ skill assessment |
| AN54.2 | Describe & identify features of plain X ray abdomen                                                                                                                                               | LGT, DOAP | Viva voce/ skill assessment |
| AN54.3 | Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema Cholecystography, Intravenous pyelography & Hysterosalpingography) | LGT, DOAP | Viva voce/ skill assessment |
| AN54.4 | Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen                                                                                                                | LGT       | Viva voce                   |

**Topic 55: Surface marking**
**Number of Competencies (2)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                 |                            |                             |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------|
| AN55.1 | Demonstrate the surface marking of Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring, McBurney's point, Renal Angle & Murphy's point | Dissection, LGT, SGT, DOAP | Viva voce/ skill assessment |
| AN55.2 | Demonstrate the surface projections of: Stomach, Liver, Fundus of gal bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery     | Dissection, LGT, SGT, DOAP | Viva voce/ skill assessment |

**Topic 56: Meninges & CSF**
**Number of Competencies (2)**
**Number of competencies for certification: (NIL)**

|        |                                                                                 |                                           |                                      |
|--------|---------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| AN56.1 | Describe & identify various layers of meninges with its extent & modifications  | LGT, Practical, Demonstration, Dissection | Written/ Viva voce/ skill assessment |
| AN56.2 | Describe formation, circulation and absorption of CSF with its applied anatomy. | LGT                                       | Written/ Viva voce                   |

**Topic 57 : Spinal Cord**
**Number of Competencies (5)**
**Number of competencies for certification: (NIL)**

|        |                                                                                      |                          |                                      |
|--------|--------------------------------------------------------------------------------------|--------------------------|--------------------------------------|
| AN57.1 | Identify external features of spinal cord                                            | Practical, Demonstration | Written/ Viva voce/ skill assessment |
| AN57.2 | Describe extent of spinal cord in child & adult with its clinical implication        | LGT, Demonstration       | Written/ Viva voce                   |
| AN57.3 | Draw & label transverse section of spinal cord at mid-cervical & mid- thoracic level | LGT                      | Written/ Viva voce                   |
| AN57.4 | Enumerate ascending & descending tracts at mid thoracic level of spinal cord         | LGT                      | Written/ Viva voce                   |

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|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------|
| AN57.5                                                 | Describe the anatomical basis of clinical conditions affecting the grey and white matter of spinal cord (Brown-Sequard Syndrome, Poliomyelitis Amyotrophic lateral sclerosis or motor neuron disease, Syringomyelia Hereditary sensory neuropathy, Subacute Combined degeneration Transversemyelitis, paraplegia) | LGT                               | Written/ Viva voce                   |
| <b>Topic 58 : Medulla Oblongata</b>                    |                                                                                                                                                                                                                                                                                                                   |                                   |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                                                                                                                                                   | <b>Number of Competencies (4)</b> |                                      |
| AN58.1                                                 | Identify external features of medulla oblongata                                                                                                                                                                                                                                                                   | Practical, Demonstration          | Written/ Viva voce/ skill assessment |
| AN58.2                                                 | Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) Inferior Olivary Nucleus                                                                                                                                                                     | LGT                               | Written/ Viva voce                   |
| AN58.3                                                 | Describe cranial nerve nuclei in medulla oblongata with their functional group                                                                                                                                                                                                                                    | LGT                               | Written/ Viva voce                   |
| AN58.4                                                 | Describe the anatomical basis of clinical conditions affecting the medulla oblongata (Medial and lateral medullary syndromes, Crossed Diplegia)                                                                                                                                                                   | LGT                               | Written/ Viva voce                   |
| <b>Topic 59: Pons</b>                                  |                                                                                                                                                                                                                                                                                                                   |                                   |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                                                                                                                                                   | <b>Number of Competencies (4)</b> |                                      |
| AN59.1                                                 | Identify external features of pons                                                                                                                                                                                                                                                                                | Practical, Demonstration          | Written/ Viva voce/ skill assessment |
| AN59.2                                                 | Draw & label transverse section of pons at the upper and lower level                                                                                                                                                                                                                                              | LGT                               | Written/ Viva voce                   |
| AN59.3                                                 | Describe cranial nerve nuclei in pons with their functional group                                                                                                                                                                                                                                                 | LGT                               | Written/ Viva voce                   |
| AN59.4                                                 | Describe the anatomical basis of clinical conditions affecting the pons (Locked-in syndrome, Pontine haemorrhage, Foville syndrome, Raymond syndrome, Millard-Gubler syndrome)                                                                                                                                    | LGT                               | Written/ Viva voce                   |
| <b>Topic 60: Cerebellum</b>                            |                                                                                                                                                                                                                                                                                                                   |                                   |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                                                                                                                                                   | <b>Number of Competencies (3)</b> |                                      |
| AN60.1                                                 | Describe & demonstrate external & internal features of cerebellum                                                                                                                                                                                                                                                 | Practical, Demonstration          | Written/ Viva voce/ skill assessment |
| AN60.2                                                 | Describe connections of cerebellar cortex and intracerebellar nuclei                                                                                                                                                                                                                                              | LGT                               | Written/ Viva voce                   |
| AN60.3                                                 | Describe anatomical basis of cerebellar dysfunction                                                                                                                                                                                                                                                               | LGT                               | Written                              |
| <b>Topic 61: Midbrain</b>                              |                                                                                                                                                                                                                                                                                                                   |                                   |                                      |
| <b>Number of competencies for certification: (NIL)</b> |                                                                                                                                                                                                                                                                                                                   | <b>Number of Competencies (3)</b> |                                      |
| AN61.1                                                 | Identify external & internal features of midbrain                                                                                                                                                                                                                                                                 | Practical, Demonstration          | Written/ Viva voce/ skill assessment |
| AN61.2                                                 | Describe internal features of midbrain at the level of superior & inferior colliculus                                                                                                                                                                                                                             | LGT                               | Written/ Viva voce                   |

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|--------|------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------|
| AN61.3 | Describe the anatomical basis of clinical conditions affecting the midbrain (Weber syndrome, Benedikt syndrome, Parinaud syndrome) | LGT | Written/ Viva voce |
|--------|------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------|

**Topic 62: Cranial nerve nuclei & Cerebral hemispheres**
**Number of Competencies (6)**
**Number of competencies for certification: (NIL)**

|        |                                                                                                                                                                                    |                               |                                      |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------|
| AN62.1 | Describe the cranial nerve nuclei with its functional components                                                                                                                   | LGT                           | Written/ Viva voce                   |
| AN62.2 | Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere. Also describe the effects of damage to various functional areas of cerebral cortex | LGT, Practical, Demonstration | Written/ Viva voce/ skill assessment |
| AN62.3 | Describe the white matter of cerebrum. Also describe the effects of damage to corpus callosum and different parts of internal capsule                                              | LGT                           | Written/ Viva voce                   |
| AN62.4 | Describe the parts & major connections of basal ganglia & limbic lobe. Also explain the anatomical basis of Parkinson's disease, chorea, athetosis and ballismus                   | LGT                           | Written/ Viva voce                   |
| AN62.5 | Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus                              | LGT                           | Written/ Viva voce                   |
| AN62.6 | Describe & identify formation, branches & major areas of distribution of circle of Willis                                                                                          | LGT, Practical, Demonstration | Written/ Viva voce/ skill assessment |

**Topic 63: Ventricular System & Special sensory pathways**
**Number of Competencies (3)**
**Number of competencies for certification: (NIL)**

|        |                                                                                     |                               |                                      |
|--------|-------------------------------------------------------------------------------------|-------------------------------|--------------------------------------|
| AN63.1 | Describe & demonstrate parts, boundaries & features of 3rd, 4th & lateral ventricle | LGT, Practical, Demonstration | Written/ Viva voce/ skill assessment |
| AN63.2 | Describe anatomical basis of congenital hydrocephalus                               | LGT                           | Written                              |
| AN63.3 | Describe the olfactory, visual, auditory and gustatory pathways                     | LGT                           | Written/ Viva voce                   |

**Topic 64: Histology & Embryology**
**Number of Competencies (3)**

|        |                                                                                                                           |                |                           |
|--------|---------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------|
| AN64.1 | Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum                                    | LGT, Practical | Written/ skill assessment |
| AN64.2 | Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum | LGT            | Written/ Viva voce        |
| AN64.3 | Describe various types of open neural tube defects with its embryological basis                                           | LGT            | Written/ Viva voce        |

**Topic 65: Epithelium histology**
**Number of Competencies (2)**

|        |                                                                                                      |                |                           |
|--------|------------------------------------------------------------------------------------------------------|----------------|---------------------------|
| AN65.1 | Identify epithelium under the microscope & describe the various types that correlate to its function | LGT, Practical | Written/ skill assessment |
| AN65.2 | Describe the ultrastructure of epithelium                                                            | LGT, Practical | Written                   |

**Topic 66: Connective tissue histology**
**Number of Competencies (2)**

|        |                                                                                    |                |                           |
|--------|------------------------------------------------------------------------------------|----------------|---------------------------|
| AN66.1 | Describe & identify various types of connective tissue with functional correlation | LGT, Practical | Written/ skill assessment |
| AN66.2 | Describe the ultrastructure of connective tissue                                   | LGT, Practical | Written                   |

| <b>Topic 67: Muscle histology</b>                                                        |                                                                                                                                                           | <b>Number of Competencies (3)</b>                      |                           |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------|
| AN67.1                                                                                   | Describe & identify various types of muscle under the microscope                                                                                          | LGT, Practical                                         | Written/ skill assessment |
| AN67.2                                                                                   | Classify muscle and describe the structure-function correlation of the same                                                                               | LGT                                                    | Written                   |
| AN67.3                                                                                   | Describe the ultrastructure of muscular tissue                                                                                                            | LGT                                                    | Written                   |
| <b>Topic 68: Nervous tissue histology</b>                                                |                                                                                                                                                           | <b>Number of Competencies (3)</b>                      |                           |
| AN68.1                                                                                   | Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve under the microscope                                                          | LGT, Practical                                         | Written/ skill assessment |
| AN68.2                                                                                   | Describe the structure-function correlation of neuron                                                                                                     | LGT                                                    | Written                   |
| AN68.3                                                                                   | Describe the ultrastructure of nervous tissue                                                                                                             | LGT                                                    | Written                   |
| <b>Topic 69: Blood Vessels</b>                                                           |                                                                                                                                                           | <b>Number of Competencies (3)</b>                      |                           |
| AN69.1                                                                                   | Identify elastic & muscular blood vessels, capillaries under the microscope                                                                               | LGT, Practical                                         | Skill assessment          |
| AN69.2                                                                                   | Describe the various types and structure-function correlation of blood vessel                                                                             | LGT                                                    | Written                   |
| AN69.3                                                                                   | Describe the ultrastructure of blood vessels                                                                                                              | LGT                                                    | Written                   |
| <b>Topic 70: Glands &amp; Lymphoid tissue</b>                                            |                                                                                                                                                           | <b>Number of Competencies (2)</b>                      |                           |
| AN70.1                                                                                   | Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini                                                         | LGT, Practical                                         | Written/ skill assessment |
| AN70.2                                                                                   | Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function | LGT, Practical                                         | Written/ skill assessment |
| <b>Topic: Bone &amp; Cartilage - Number of Competencies (2)</b>                          |                                                                                                                                                           |                                                        |                           |
| AN71.1                                                                                   | Identify bone under the microscope; classify various types and describe the structure-function correlation of the same                                    | LGT, Practical                                         | Written/ skill assessment |
| AN71.2                                                                                   | Identify cartilage under the microscope & describe various types and structure-function correlation of the same                                           | LGT, Practical                                         | Written/ skill assessment |
| <b>Topic 72: Integumentary System</b>                                                    |                                                                                                                                                           | <b>Number of Competencies (1)</b>                      |                           |
| AN72.1                                                                                   | Identify the skin and its appendages under the microscope and correlate the structure with function                                                       | LGT, Practical                                         | Written/ skill assessment |
| <b>Topic: 73 Chromosomes</b>                                                             |                                                                                                                                                           | <b>Number of Competencies (3)</b>                      |                           |
| AN73.1                                                                                   | Describe the structure of chromosomes with classification                                                                                                 | LGT, Practical                                         | Written                   |
| AN73.2                                                                                   | Describe technique of karyotyping with its applications                                                                                                   | LGT, Practical                                         | Written                   |
| AN73.3                                                                                   | Describe the Lyon's hypothesis                                                                                                                            | LGT, Practical                                         | Written                   |
| <b>Topic 74: Patterns of Inheritance</b>                                                 |                                                                                                                                                           | <b>Number of Competencies (4)</b>                      |                           |
| AN74.1                                                                                   | Describe Mendelian and non-Mendelian inheritance. Explain various modes of inheritance with examples.                                                     | LGT, Practical                                         | Written                   |
| AN74.2                                                                                   | Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance                                         | LGT, Practical                                         | Written                   |
| AN74.3                                                                                   | Describe multifactorial inheritance with examples                                                                                                         | LGT, Practical                                         | Written                   |
| AN74.4                                                                                   | Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant                                                    | LGT, Practical                                         | Written                   |
| <b>Topic 75: Principles of Genetics, Chromosomal Aberrations &amp; Clinical Genetics</b> |                                                                                                                                                           | <b>Number of competencies for certification: (NIL)</b> |                           |
| <b>Number of Competencies (5)</b>                                                        |                                                                                                                                                           |                                                        |                           |
| AN75.1                                                                                   | Describe the structural and numerical chromosomal aberrations                                                                                             | LGT, Practical                                         | Written                   |
| AN75.2                                                                                   | Explain the terms mosaics and chimeras with example                                                                                                       | LGT                                                    | Written                   |
| AN75.3                                                                                   | Describe the genetic basis & clinical features of: Prader Willi syndrome, Edward syndrome, Patau syndrome, Down syndrome,                                 | LGT                                                    | Written                   |

|                                                  |                                                                                                                          |                                                        |         |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------|
|                                                  | Turner Syndrome & Klinefelter syndrome                                                                                   |                                                        |         |
| AN75.4                                           | Describe genetic basis of variation: polymorphism and mutation                                                           | LGT                                                    | Written |
| AN75.5                                           | Describe in brief: genetic counseling, karyotyping, FISH, PCR and genetic sequencing                                     | LGT                                                    | Written |
| <b>Topic 76: Introduction to embryology</b>      |                                                                                                                          | <b>Number of competencies for certification: (NIL)</b> |         |
| <b>Number of Competencies (2)</b>                |                                                                                                                          |                                                        |         |
| AN76.1                                           | Describe the stages of human life                                                                                        | LGT                                                    | Written |
| AN76.2                                           | Explain the terms- phylogeny, ontogeny, trimester, viability                                                             | LGT                                                    | written |
| <b>Topic 77: Gametogenesis and fertilization</b> |                                                                                                                          | <b>Number of competencies for certification: (NIL)</b> |         |
| <b>Number of Competencies (6)</b>                |                                                                                                                          |                                                        |         |
| AN77.1                                           | Describe the uterine changes occurring during the menstrual cycle                                                        | LGT                                                    | Written |
| AN77.2                                           | Describe the synchrony between the ovarian and menstrual cycles                                                          | LGT                                                    | Written |
| AN77.3                                           | Describe spermatogenesis and oogenesis along with diagrams                                                               | LGT                                                    | Written |
| AN77.4                                           | Describe the stages and consequences of fertilisation                                                                    | LGT                                                    | Written |
| AN77.5                                           | Describe the anatomical principles underlying contraception                                                              | LGT                                                    | Written |
| AN77.6                                           | Describe teratogenic influences: fertility and sterility, surrogate motherhood, social significance of "sex- ratio".     | LGT                                                    | Written |
| <b>Topic 78 : Second week of development</b>     |                                                                                                                          | <b>Number of Competencies (5)</b>                      |         |
| AN78.1                                           | Describe cleavage and formation of blastocyst                                                                            | LGT                                                    | Written |
| AN78.2                                           | Describe the development of trophoblast                                                                                  | LGT                                                    | Written |
| AN78.3                                           | Describe the process of implantation & common abnormal sites of implantation                                             | LGT                                                    | Written |
| AN78.4                                           | Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate                       | LGT                                                    | Written |
| AN78.5                                           | Describe abortion, decidual reaction, pregnancy test                                                                     | LGT                                                    | Written |
| <b>Topic 79: 3rd to 8th week of development</b>  |                                                                                                                          | <b>Number of Competencies (6)</b>                      |         |
| AN79.1                                           | Describe the formation & fate of the primitive streak                                                                    | LGT                                                    | Written |
| AN79.2                                           | Describe formation & fate of notochord                                                                                   | LGT                                                    | Written |
| AN79.3                                           | Describe the process of neurulation                                                                                      | LGT                                                    | Written |
| AN79.4                                           | Describe the development of somites and intra-embryonic coelom                                                           | LGT                                                    | Written |
| AN79.5                                           | Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects | LGT                                                    | Written |
| AN79.6                                           | Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein                         | LGT                                                    | Written |
| <b>Topic 80: Fetal membranes</b>                 |                                                                                                                          | <b>Number of Competencies (7)</b>                      |         |
| AN80.1                                           | Describe formation, functions & fate of chorion, amnion, yolk sac, allantois & decidua                                   | LGT                                                    | Written |
| AN80.2                                           | Describe formation & structure of umbilical cord                                                                         | LGT                                                    | Written |
| AN80.3                                           | Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier               | LGT                                                    | Written |
| AN80.4                                           | Describe embryological basis of twinning in monozygotic & dizygotic twins                                                | LGT                                                    | Written |
| AN80.5                                           | Describe role of placental hormones in uterine growth & parturition                                                      | LGT                                                    | Written |
| AN80.6                                           | Explain embryological basis of estimation of fetal age.                                                                  | LGT                                                    | Written |
| AN80.7                                           | Describe various types of umbilical cord attachments                                                                     | LGT                                                    | Written |
| <b>Topic 81: Prenatal Diagnosis</b>              |                                                                                                                          | <b>Number of Competencies (3)</b>                      |         |
| AN81.1                                           | Describe various invasive & non-invasive methods of prenatal diagnosis                                                   | LGT                                                    | Written |

|                                    |                                                                                                        |                                   |         |
|------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------|---------|
| AN81.2                             | Describe indications, process and disadvantages of amniocentesis                                       | LGT                               | Written |
| AN81.3                             | Describe indications, process and disadvantages of chorion villus biopsy                               | LGT                               | Written |
| <b>Topic 82: Ethics in Anatomy</b> |                                                                                                        | <b>Number of Competencies (1)</b> |         |
| AN 82.1                            | Demonstrate respect, and follow the correct procedure when handling cadavers and other biologic tissue | SGT                               | NIL     |

### 11. Recommended Books

1. Cunningham's manual of Practical Anatomy Volume I, II, III (Latest edition))
2. Human Anatomy – B.D.Chaurasia or Vishram Singh including General Anatomy
3. Human Embryology – Inderbir Singh or Yogesh Sontakke (Latest edition)
4. Practical manual (Gross & Microanatomy) – as recommended by institutes
5. Human Histology – Inderbir Singh or G.P.Pal or Yogesh Sontakke

### Optional Reference Books

1. Gray,s Anatomy : Susan standring, Churchill LDrivingstone (Latest edition)
- 2.Clinical Anatomy for Medical students : RS Snell (Latest edition)
- 3.Di Fiore's Atlas of Histology with functional correlation (Latest edition)
- 4.Langman's Medical embryology: T.W.Sadler (Latest edition)
5. Netter's Atlas of Anatomy (Latest edition)
6. Grants Atlas of Anatomy (Latest edition)
7. Thomson and ThomsonGenetics in Medicine
8. Surface and Radiology Anatomy : A.Halim

## **12. Contributors Name**

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## **13. Remarks**

**R-23 means Regulation 23**

**( Including students from batch 2019 onwards to 2023-2024)**

**R-24 meansb Regulation 24**

**( includes students from batch 2024-2025 & onwards)**