



**All India Institute of Medical Sciences, Kalyani**  
**B.Sc. OTT First Year Final Examination, August 2024**

**Time: 3 Hrs.**

**Basic Sciences**

**Marks: 100**

**INSTRUCTIONS:**

- Answer all questions.
- Illustrate your answers with well labelled diagram wherever necessary.
- Answer each section in a separate answer book.

**SECTION – A (Anatomy)(25)**

**Brief Answer Questions:**

**(3×5=15)**

1. Enumerate the surfaces, borders, chambers and valves of the heart. Name the layers of the sac covering the heart. (4+1)
2. State the Classification of the bones with suitable examples. (5)
3. List the key differences between the small intestine and large intestine. Name the accessory organs of digestion. (3+2)

**Long Answer Questions:**

**(1×10=10)**

4. a. Mention the surfaces, borders, lobes, fissures and bronchopulmonary segments of the right lung. (1+1+1+1+4)
- b. Enumerate the structures passing through the hilum of the right lung. (2)

**SECTION – B (Physiology)(30)**

**Brief Answer Questions:**

**(2×5=10)**

1. Describe the steps of Spermatogenesis. List the hormones that stimulate Spermatogenesis. (3+2)
2. Briefly describe the long-term regulation of Blood Pressure. (5)

**Long Answer Questions:**

**(2×10=20)**

3. Write the importance of blood clotting. Explain the steps involved in the major two pathways of coagulation cascade. (2+4+4)
4. a. Draw a well labelled diagram of Nerve fibre. Add a note on saltatory conduction. (3+2)
- b. What is referred pain? Explain any two theories of referred pain with example and appropriate schematic diagram (1+2+2)

**SECTION – C (Biochemistry)(25)**

**Brief Answer Questions:**

**(3×5=15)**

1. Classify the Vitamins. What are the major functions of vitamin A? Enumerate the clinical features of vitamin A deficiency. (2+2+1)
2. Mention reference fasting & post prandial plasma glucose level. How the plasma glucose level is maintained? (2+3)
3. What is the function of Urea cycle? Mention the reference serum urea level. Why ammonia is toxic to the body? (2+1+2)

**Long Answer Questions:**

**(1×10=10)**

4. Define lipid. With reference ranges enumerate the parameters commonly measure to assess lipid profile of a person. Why HDL cholesterol is known as good cholesterol? (2+5+3)



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Invigilator sign: \_\_\_\_\_

### SECTION D (Basic Sciences)

#### ANATOMY

#### INSTRUCTIONS:

- Section D (Basic Sciences) should be answered in first 20 minutes of the Exam duration and handed over to the invigilators.
- Put one Tick (✓) mark to only one answer that you consider correct for each question.
- Mark your Tick (✓) in pen.

#### Multiple Choice Questions (MCQs):

[10x1=10]

1. The sectional plane that divides the body into superior and inferior segments is called
  - a. Sagittal plane
  - b. Coronal plane
  - c. Oblique plane
  - d. Transverse plane
2. The cervical part of the vertebral column consists of
  - a. 6 vertebrae
  - b. 7 vertebrae
  - c. 8 vertebrae
  - d. 5 vertebrae
3. The outermost covering of the Brain is formed by
  - a. White matter
  - b. Pia mater
  - c. Dura mater
  - d. Arachnoid mater
4. Fertilisation most commonly occurs in
  - a. Uterus
  - b. Vagina
  - c. Ovary
  - d. Uterine tube
5. which one of the following is an accessory organ of the male reproductive system
  - a. Spleen
  - b. Prostate
  - c. Bone Marrow
  - d. Lymph node
6. The coronary arteries are the branches of
  - a. Common carotid artery
  - b. Ascending aorta
  - c. Subclavian artery
  - d. Femoral artery
7. The Femur is an example of
  - a. Long bone
  - b. Flat bone
  - c. Irregular bone
  - d. Sesamoid bone
8. The Detrusor muscle is present in
  - a. Lungs
  - b. Heart
  - c. Diaphragm
  - d. Urinary Bladder
9. Which one of the following is the unpaired cartilage of the larynx
  - a. Arytenoid
  - b. Corniculate
  - c. Thyroid
  - d. Cuneiform
10. which one of the following nerves conveys the sense of smell
  - a. Optic
  - b. Glossopharyngeal
  - c. Olfactory
  - d. Spinal accessory



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### SECTION D (Basic Sciences)

#### PHYSIOLOGY

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#### Multiple Choice Questions (MCQs):

[5x1=5]

1. What is the site of the action of Vasopressin?
  - a. Proximal tubule
  - b. Loop of Henle
  - c. Vasa recta
  - d. Collecting tubule
2. Duration of Cardiac cycle in a normal adult human is
  - a. 0.4 seconds
  - b. 0.8 seconds
  - c. 1.2 seconds
  - d. 1.6 seconds
3. Medial Geniculate Body is concerned with -
  - a. Hearing
  - b. Vision
  - c. Smell
  - d. Taste
4. Lowest threshold potential in a motor nerve fibre is at -
  - a. Dendrite
  - b. Body
  - c. Axon hillock
  - d. Axon
5. Osmotic pressure is mainly due to-
  - a. Glucose
  - b. Albumin
  - c. Chloride
  - d. Sodium

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### SECTION D (Basic Sciences)

#### BIOCHEMISTRY

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- Mark your Tick (✓) in pen.

#### Multiple Choice Questions (MCQs):

[5x1=5]

1. The Plasma and serum differ as plasma
    - a. has more water
    - b. does not contain electrolytes
    - c. contains fibrinogen
    - d. contains iron
  2. Which of the following will give Benedict test positive?
    - a. Sucrose
    - b. Fructose
    - c. Starch
    - d. Glycogen
  3. All of the followings are essential fatty acids except
    - a. Linoleic acid
    - b. Linolenic acid
    - c. Oleic acid
    - d. Arachidonic acid
  4. Which of the following vitamins are produced by intestinal bacterial flora?
    - a. Vitamin A
    - b. Vitamin C
    - c. Vitamin K
    - d. Vitamin D
  5. Which of the following parameters estimation is affected due to prolonged tourniquet use?
    - a. Calcium
    - b. Potassium
    - c. Sodium
    - d. Iron
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