



**All India Institute of Medical Sciences, Kalyani**

**First Professional MBBS Supplementary Examination (Batch-2021-22)**

**Time: 3 Hrs.**

**Physiology (Paper-II)**

**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 (50 MARKS)**

(Renal physiology, Endocrinology and Reproductive Physiology)

1. Discuss the regulation of thyroid hormones levels and describe the symptoms and signs in a patient suffering from hyperthyroidism (5+3+2=10)
2. Describe the causes and clinical features of Cushing syndrome (5)
3. a. Describe the functions of Juxtaglomerular Apparatus (3)  
b. State the role of kidney in regulation of blood pressure (2)
4. a. Explain Micturition reflex (2.5)  
b. Describe the factors affecting the glomerular filtration rate (2.5)
5. Discuss the hormonal regulation of female reproductive cycle (5)
6. Discuss the process of fertilization in humans (5)
7. a. Describe the endocrine functions of placenta (3)  
b. Describe the structure of mature human spermatozoan (2)
8. Describe the growth curves and factors affecting growth in human (2.5+2.5)
9. Answer the following: (5X1)
  - a. Mechanism of action of loop diuretics
  - b. Mechanism of polyphagia in Diabetes mellitus
  - c. Effects of hypoproteinemia on glomerular filtration rate (GFR)
  - d. Causes of Tetany
  - e. Mechanism of action of non-steroidal oral contraceptive.

**SECTION - B (50 MARKS)**  
(Neurophysiology, Special Senses and Yoga)

1. Describe the types of memory. Discuss the physiological and molecular basis of long term memory. Discuss the pathophysiology of Alzheimer's disease. (2+4+3=10)
2. Discuss the role of cerebellum in maintaining posture and equilibrium (5)
3. Describe in brief about various inhibitions of synapse (5)
4. With the help of labeled diagram describe the pain pathway and endogenous analgesia system. (5)
5. Describe autonomic neurotransmitters and receptors. (5)
6. Compare and contrast (2.5+2.5)
  - a. REM sleep and NREM sleep
  - b. Sensory and Motor aphasia
7. Trace the visual pathway and mention the visual field defects produced by lesions in the different segments (2.5+2.5)
8. Discuss the cochlear mechanism of hearing of sound wave (5)
9. Describe the physiological benefits of yoga. (5)

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