

0422E373

# **First Year MBBS Examination**

## **I MBBS Physiology Paper 2**

Time: 3 hours

*Instructions: 1. Answer to the points. 2. Use separate answer books for each section. 3. Draw diagrams wherever necessary.*

### **Section 1**

Max Marks: 100

**1. Write the following structured long question (any 1 out of 2) (10)**

- a. Discuss in detail the functions of cerebellum.
- b. Explain the posterior column tracts in detail.

**2. Write the following case - based scenario / applied short notes (any 2 out of 3) (12)**

- ~~a. A 32-year-old woman presents to her primary~~

care physician's office with difficulty in chewing of food. She complains that when she eats certain foods that require a significant amount of chewing (meat), her jaw muscles become weak and "tired." After a period of rest, her jaw muscles regain their strength until she eats again. The patient was diagnosed to be suffering from myasthenia gravis and started on neostigmine, an acetylcholinesterase (AChE) inhibitor. a) What is myasthenia gravis? b) Discuss the molecular theory of skeletal muscle contraction. c) Describe the role of an acetylcholinesterase inhibitor in the treatment of myasthenia gravis.

- b. Anita a 40-year-old bank employee visited the medicine OPD of a hospital with complaints of (C/O), her colleagues pointed out that her physical appearance had been changing day by day, her features had become coarse, She had a protruding lower jaw with widely placed teeth. She also added that she had suddenly stopped menstruating for last 4 years ago; that her sandal & shoe, size had increased along with her fingers so that her rings no longer fit. On physical examination she had- Coarse facial features, prognathism, and large hands and feet, Blood pressure was elevated at 170/110 mmHg Laboratory

findings: Fasting s-glucose 250 mg/dL, fasting blood growth hormone 90 ng/mL, IGF-I elevated, FSH decreased, TSH normal, T4 normal, Prolactin elevated. She was diagnosed with Acromegaly. a) Discuss Acromegaly with an explanation of the physiological basis of its sign and symptoms. b) Enumerate the hormones secreted by the anterior and posterior pituitary. c) What are somatomedins?

- c. Discuss the different contraceptives used in females.

### **3. Write short notes (any 3 out of 4) (18)**

- a. Uterine changes in a female during the menstrual cycle.
- b. Liver function tests.
- c. Composition of pancreatic juice and actions of different enzymes present in it.
- d. Spermatogenesis.

### **4. Answer in only 2-3 sentence (any 5 out of 6) (10)**

- a. The pain of appendicitis is initially felt in and around the umbilicus. Why?
- ~~b. Basal body temperature of the female~~

increases at the time of ovulation. Why?

- c. Even after amputation of a limb, the patient can sometimes feel pain in the amputated limb. Why?
- d. What is deglutition apnea?
- e. Barr's body is absent in a patient with Turner syndrome. Why?
- f. Role of L-dopa in treatment of Parkinson's disease.

## **Section 2**

### **5. Write the following structured long question (any 1 out of 2) (10)**

- a. Enumerate the hormones secreted by the adrenal cortex. Describe the functions of glucocorticoids.
- b. Discuss the mechanism of secretion and functions of Insulin.

### **6. Write short notes (any 2 out of 3) (12)**

- a. Physiological properties of skeletal muscle.
- b. Electrophysiological classification of nerves.
- c. Neuro-muscular transmission of nerve impulses.

## **7. Write short notes (any 3 out of 4) (18)**

- a. Cholinergic receptors.
- b. Parasympathetic chain of ganglia.
- c. Errors of refraction.
- d. Organ of Corti.

## **8. Answer in only 2-3 sentence (any 5 out of 6) (10)**

- a. The reason behind polydipsia in a patient with diabetes mellitus.
- b. Athletes' warm-up before any race. Why?
- c. Which is the commonest type of color blindness?
- d. Signs and symptoms of Horner's syndrome are.
- e. Saltatory conduction is seen in which nerves?
- f. What are the differences between a pituitary dwarf and a thyroid dwarf (cretin)?