

**Total No. of Printed Pages - 3**

**SS/MBBS-I/PHY-I/08-24**

**2024**

**(August)**

**PHYSIOLOGY**

**Paper-I**

**Full Marks: 90**

**Time: 2 hours 50 minutes**

**The figures in the margin indicate**

**full marks for the questions**

**Answer all questions**

1. 1. Mention the functional divisions of the cerebellum. Describe the functions and connections of the cerebellum. Add a note on cerebellar function tests.

3 + 8 + 4 = 15

2. Write short notes on the following:

5 × 7 = 35]

(a) Blood-brain barrier

(b) Hormones acting on the breast

(c) Cochlear microphonics

(d) Excitation-contraction coupling

(e) Mechanism of development of action potential

(f) Wallerian degeneration

(g) Composition of cerebrospinal fluid and its clinical importance

3. Enumerate and describe the professional qualities and roles of a physician. 5

4. Enumerate the hormones that maintain normal calcium and phosphate homeostasis. Describe their role in maintaining calcium and phosphate homeostasis. Add a note on the pathophysiology of rickets and osteomalacia.

$$3 + 8 + 4 = 15$$

5. Give the physiological basis of the following:

$$2 \times 3 = 6$$

- (a) Phantom limb
- (b) Sudden cessation of steroid therapy is avoided
- (c) Sympathetic nervous system is referred to as the catabolic nervous system

6. Differentiate between the following:

$$[2 \times 2 = 4]$$

- (a) EPSP and IPSP
- (b) Cretinism and Dwarfism

7. A 70-year-old hypertensive male has come to the hospital with complaints of inability to use the right upper and lower limbs. Physical examination revealed hypertension with exaggerated deep tendon reflexes and Babinski's sign on the right side of the body.

$$[2 + 1 + 2 + 4 = 10]$$

- (a) Name the clinical condition.
- (b) Name the tract affected in this patient.
- (c) Mention the most probable site of the lesion.
- (d) Mention two other clinical findings you expect in this condition.
- (e) Differentiate between upper motor neuron and lower motor neuron lesions.

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