

# 2019 Scheme

Q.P. Code: 114001

Reg. no.: .....

## First Professional MBBS Degree Supplementary (SAY) Examinations January 2024 Physiology II

Time: 3 Hours

Total Marks: 100

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers
- Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw table/diagrams/flow charts wherever necessary

### Long Essays

(2x15=30)

1. A 35-year-old man was brought to the casualty after a stab injury to the left side of his back. Imaging study showed injury to left half of spinal cord in region of 9<sup>th</sup> and 10<sup>th</sup> thoracic vertebrae. Neurological examination showed that he was unable to move his left lower limb. Some sensations were absent on the left half of the body while some other sensations were absent on the right side. On the left side the abdominal reflex was absent, but knee and ankle jerks were brisk.
  - a) Name the most probable clinical condition in this patient.
  - b) Explain the physiological basis for the typical sensory loss in this patient.
  - c) Describe the sensory and motor changes occurring at the level and below the level of injury in such cases.
  - d) Describe the theories of referred pain using an example(1+3+7+4)
2. Describe the regulation of serum calcium with the mechanisms involved. Write the physiological basis for tetany in hypocalcemia. List the causes and clinical features of hypercalcemia. (8+3+4)

### Short essays

(5x8=40)

3. Describe the physiological actions of glucocorticoids. List the features of Cushing's syndrome. (5+3)
4. Describe the functions of cerebellum. List the clinical features of cerebellar dysfunction (4+4)
5. Draw and label the visual pathway showing the effect of lesion at various levels. Add a note on presbyopia (6+2)
6. Describe the actions of insulin. Write the physiological basis for polyphagia, polydipsia and polyuria in diabetes mellitus (3+5)
7. List the contraceptive methods in females. Describe the physiological basis for any two of them (2+3+3)

### Write briefly

(5x4=20)

8. Sodium-potassium pump is essential for homeostasis – why?
9. Describe the length – tension relationship in skeletal muscles
10. Physiological basis for the blood-brain barrier.
11. Explain the mechanism and importance of acoustic reflex in middle ear
12. Soldiers do not feel the pain of their injury until the battle is over – why?

### One word Answers

(10x1=10)

13. Astigmatism is corrected using ----- lens
14. Monosodium glutamate is associated with the primary taste sensation called -----
15. Antidiuretic hormone acts on ----- cells of the nephron
16. Hormone that stimulates milk production in the alveoli of mammary gland -----
17. Testosterone is produced by ----- cells of the testes.
18. Mental retardation occurs in dwarfism due to-----
19. An example of fast-adapting sensory receptor -----
20. Time required for double the Rheobase current to elicit response is called -----
21. Parturition reflex is an example of ----- feedback
22. Name the receptors present within the utricle, saccule and the semicircular canals

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