

**The West Bengal University of Health Sciences**  
**MBBS 1<sup>st</sup> Professional Examination (New Regulation), Feb-March, 2024**

Subject: Physiology

Full Marks : 100

Paper: II

Time: 3 hours

*Attempt all questions. The figures in the margin indicate full marks.*

1. a) A patient came to emergency dept. with road traffic accident, with injury at the level of T8 vertebra. On examination, it was found that motor loss is prominent on the same side and sensory loss on the opposite side below T8. What is your diagnosis? Explain the phenomenon with diagram. Which type of sensation will be affected below that lesion and why? 1+(5+5)+(2+2)
- b) A 40 year old female patient suffered from severe pain in her right upper abdomen which radiated to the back. Oral cholecystography revealed presence of multiple stones in her gall bladder. She also suffered pain in left neck. What is the cause of 'pain in the neck'? What is dermatomal rule? What are the theories behind this neck pain? Describe briefly the pain-inhibiting mechanisms in the body. 2+1+4+8
2. a) Enumerate contraceptive methods in male and female. Discuss the advantages and disadvantages of oral contraceptive pills. 5+5
- b) Briefly discuss counter current mechanism. What is the importance of vasa recta? 8+2
- c) Outline the steps of synthesis of thyroid hormone. What is Wolff Chaikoff effect? 8+2
3. Write short notes on the following: 2x5
  - a) Stretch reflex and inverse stretch reflex.
  - b) Splay phenomenon.
4. Explain the following statements: 5x4
  - a) Adequate sleep promotes growth.
  - b) Radiologist/pilots use red goggles when come to bright light.
  - c) Mother's urinary estriol provides a good index of fetal wellbeing.
  - d) Polyphagia occurs in diabetes mellitus.
  - e) Aspirin and NSAIDs relieve fever.
5. Choose the correct option of each of the following: 10x1
  - i) Transection of pituitary stalk increases the secretion of
    - a) ACTH.
    - b) Prolactin.
    - c) Growth Hormone.
    - d) None of the above.
  - ii) Sertoli cell secretes all except:
    - a) Androgen binding protein.
    - b) Inhibin.
    - c) Testosterone.
    - d) Mullerian Inhibiting substance.

**P.T.O**



- iii) Which is not true about knee jerk?
- a) It involves a brief contraction of Quadriceps muscle.
  - b) It is a polysynaptic reflex.
  - c) Delayed relaxation may be seen in a hypothyroid child.
  - d) May be absent in lesions involving L3-L4 segment.
- iv) Which is not characteristic of REM sleep?
- a) Subject is difficult to arouse.
  - b) Muscle tone is increased.
  - c) Increased activity in pontine.
  - d) Low voltage high frequency waves seen in EEG.
- v) Which of the following hormones is responsible for conversion of chondrocytes into osteogenic cells?
- a) Thyroxine.
  - b) Testosterone.
  - c) Parathyroid hormone.
  - d) Growth hormone.
- vi) Which of the following causes hypocalcemia?
- a) Parathormones.
  - b) Calcitonin.
  - c) Cholecalciferol.
  - d) Thyroxine
- vii) All are second messengers except.
- a) ATP
  - b) cAMP.
  - c)  $Ca^{++}$ .
  - d)  $IP_3$ .
- viii) Hormone responsible for midcycle rise in basal body temperature is:
- a) Follicle stimulating hormone.
  - b) Luteinizing hormone.
  - c) Progesterone.
  - d) Estrogen.
- ix) Medial Geniculate Body is related with:
- a) Taste.
  - b) Smell.
  - c) Vision.
  - d) Hearing.
- x) Purkinje fibres are inhibitory to:
- a) Deep cerebellar nuclei.
  - b) Climbing fibre.
  - c) Basket cells.
  - d) Spinocerebellar tracts