

The West Bengal University of Health Sciences
MBBS 1st Professional Examination (New Regulation),
October - November 2021

Subject: Physiology
 Paper : II

Full Marks : 100
 Time : 3 hours

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

1. a) Explain with a well labeled diagram origin, course, termination of pyramidal tract. Add a note on Brown Sequard Syndrome. List differences between lower motor and upper motor neuron lesions. 6+4+5
- b) Enumerate the functions of calcium in our body. What are the hormones and how they maintain calcium homeostasis? Compare and contrast between Rickets and osteomalacia? 3+8+4
2. a) Explain the mechanism of action of insulin. What are the consequences of insulin deficiency in our body. Name the other hormones secreted from pancreas. 3+5+2
- b) Schematically describe the steps of spermatogenesis. Define ovulation. What is LH surge. 5+2+3
- c) Describe the various mechanisms of sodium absorption in renal tubules. What is the role of renal medulla in concentrating the urine? 5+5
3. Write short notes on the following: 2x5
 - a) Organ of Corti.
 - b) Diabetes ketoacidosis.
4. Explain the following statements: 5x4
 - a) Crushing injuries to spinal cord causes atonic bladder.
 - b) In Weber's test sound is lateralized to diseased ear in conductive deafness.
 - c) Homonymous hemianopia occurs in optic tract damage.
 - d) Removal of ovaries before 12 weeks leads to abortion.
 - e) Anaemia occurs in chronic kidney disease.
5. Choose the correct option of each of the following: 10x1
 - i) The conversion & consolidation of short term memories to long term memories occurs in:
 - a) Hippocampus.
 - b) Amygdala.
 - c) Cerebral Cortex.
 - d) Hypothalamus.
 - ii) Ablation of Somatosensory area does not significantly impair:
 - a) Joint position sense.
 - b) Touch localization.
 - c) Two-point Discrimination.
 - d) Pain perception.

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- iii) Which is not a feature of Primary Hyperaldosteronism?
- a) Hypertension.
 - b) Tetany.
 - c) Hypokalemic alkalosis.
 - d) Edema.
- iv) GH acts through which type of receptors?
- a) Receptor Tyrosine Kinase.
 - b) Receptor Guanylyl cyclase.
 - c) Tyrosine Kinase associated Receptor.
 - d) Receptor Tyrosine phosphatase.
- v) Male Pseudohermaphroditism is caused by all except:
- a) 5 α - reductase Deficiency.
 - b) Cholesterol Desmolase Deficiency.
 - c) 17 α Hydroxylase Deficiency.
 - d) 21 α Hydroxylase Deficiency.
- vi) Circadian rhythm is controlled by
- a) Suprachiasmatic nucleus.
 - b) Thalamus.
 - c) Raphe nuclei.
 - d) Reticular nucleus.
- vii) Motor aphasia (non fluent) is from damage to:
- a) Superior temporal cortex.
 - b) Angular gyrus.
 - c) Prefrontal area.
 - d) Broca's area.
- viii) Cones are responsible for the following except.
- a) Colour vision.
 - b) Acuity of vision.
 - c) Photopic vision.
 - d) Scotopic vision.
- ix) Inhibitory neurotransmitter in CNS neuron is:
- a) Glutamate.
 - b) Aspartate.
 - c) Taurine.
 - d) GABA.
- x) The Raphe nucleus secretes:
- a) Noradrenaline.
 - b) Dopamine.
 - c) Serotonin.
 - d) Neuropeptide Y.