

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

Subject: Physiology
Paper : II

Full Marks : 100
Time : 3 hours

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

1. a) Name the components of basal ganglia. With a suitable diagram outline their chief connections and functions. Briefly state the features and treatment of Parkinsonism. 2+3+3+5+2
- b) Describe the mechanism of action of growth hormone. Enumerate the factors influencing secretion of growth hormone. 10+5
2. a) Define pain. Describe pain pathways. Write briefly endogenous pain control mechanisms. 1+6+3
- b) Describe how the countercurrent mechanism in the kidney operates to produce hypertonic or hypotonic urine. Add a note on micturition reflex. 5+5
- c) What is menstrual cycle? Explain the ovarian changes taking place during menstrual cycle. 3+7
3. Write a short notes on the following: 5x2
 - a) Oral contraceptive pills.
 - b) Acromegaly.
4. Explain the following statements: 5 x 4
 - a) Older persons show presbyopia.
 - b) Cryptorchids are usually causes infertility.
 - c) Lactation is a natural method of contraception.
 - d) Thyroid dwarfs are usually mentally retarded.
 - e) Hemi section of spinal cord affects both sides of the body.
5. Choose the correct option of each of the following: 10x1
 - i) Which of the following is true of the tubular fluid that passes through the lumen of the early distal tubule in the region of the macula densa?
 - a) It is usually isotonic
 - b) It is usually hypotonic
 - c) It is usually hypertonic
 - d) It is hypertonic in antidiuresis

P.T.O.

- ii) Which muscle is contracted as part of the pupillary light reflex?
- a) Ciliary muscle
 - b) Pupillary dilator muscle
 - c) Pupillary sphincter muscle
 - d) Radial fibers of the iris
- iii) Factors that increase the secretion of human prolactin:
- a) Glucose
 - b) L-Dopa
 - c) Sleep
 - d) Somatostatin
- iv) Paradoxical sleep consists of all except:
- a) Rapid, low voltage EEG activity with PGO spikes.
 - b) Slow wave EEG with sleep spindles.
 - c) Hypotonia.
 - d) Roving movement of eyeball.
- v) Vanilloid receptors are activated by
- a) Touch
 - b) Pressure
 - c) Pain
 - d) Vibration
- vi) Sectioning the brainstem between superior and inferior colliculi will produce.
- a) Decerebrate rigidity
 - b) Decorticate rigidity
 - c) Clasp-knife spasticity
 - d) Lead pipe rigidity
- vii) Which neurotransmitter is released by both rods and cones at their synapses with bipolar cells?
- a) Acetylcholine
 - b) Dopamine
 - c) Glutamate
 - d) Serotonin
- viii) Which of the following is not an effect of efferent arteriole constriction.
- a) Decreased GFR
 - b) Increased glomerular hydrostatic pressure
 - c) Decreased blood flow in peritubular vessels
 - d) Increased oncotic pressure in peritubular vessels

P.T.O.

ix) Decidual cells are found in the:

- a) Uterus
- b) Prostate
- c) Placenta
- d) Hypothalamus

x) In human males, testosterone is produced mainly by the

- a) Leydig cells
- b) Sertoli cells
- c) Seminiferous tubules
- d) Epididymis.