

**Madhya Pradesh Medical Science University,
Jabalpur
MBBS First Professional Examination Feb-2023
Subject- Physiology
Paper-II**

Time: 3:00 Hours

Maximum Marks :100

Instructions:

- a) All questions are compulsory
- b) Draw diagrams wherever necessary
- c) Answers of Questions and Sub-questions must be written strictly according to serial order of question paper.
- d) MCQ has to be answered in theory answer book
- e) Please write MCQ answer neatly and in serial order with black or blue pen in brackets; for example: - 1. (a) 2. (c)
- f) MCQ has to be answered only once, any kind of repetition or cutting or erasing or whitener will be considered as malpractice, such answers will not be
- g) sawitedje mekarndartine milubertakanugeosdinatray FA Futers.frrix&Gritple, if a question having 2 marks should answered in up to 60 marks.

Q1. Total MCQs: 10

10 x 1 = 10

1) Weber Fechner law is related with

- (a) amplitude
- (b) surface area
- (c) number of sensory fibers involvement
- (d) stimulus discrimination

2) The processing of short-term memory to long term memory is done in

- (a) prefrontal cortex
- (b) hippocampus
- (c) neocortex
- (d) amygdala

3) Wallerian degeneration is seen in

- (a) proximal cut end of nerve with cell body
- (b) distal cut end of nerve without cell body
- (c) both the free ends of the cut nerve
- (d) all of the above

4) In normal kidneys, which of the following is true for osmolarity of renal tubular fluid that flows through the early distal tubule in the region of macula densa

- (a) usually hypotonic compared to plasma
 - (b) usually isotonic compared to plasma
-

- (c) usually hypertonic compared to plasma
- (d) hypertonic compared to plasma, during antidiuresis
- 5) Which of the following allows smooth muscle to maintain sustained contraction with minimal energy usage
- (a) dense body
 - (b) gap junctions
 - (c) intermediate filaments
 - (d) latch state
- 6) In muscle contraction, all are true except
- (a) A band remains unchanged
 - (b) H zone disappears
 - (c) I band becomes wider
 - (d) two Z lines come closer
- 7) Which sensory receptor is most sensitive to angular acceleration
- (a) crista
 - (b) utricle
 - (c) saccule
 - (d) organ of corti
- 8) Broca's area is concerned with
- (a) word formation
 - (b) comprehension
 - (c) repetition
 - (d) reading
- 9) Renshaw cell inhibition is an example of

- (a) feedback inhibition
- (b) feed forward inhibition
- (c) feed forward facilitation
- (d) feedback facilitation

10) In cerebellar disease, all of the following are correct EXCEPT

- (a) the Romberg's sign is positive
- (b) there is adiadochokinesia
- (c) there is pendular knee jerk
- (d) there are involuntary tremors

Q2. Long Answer Questions

2 x 20 = 40

a. A 75-year-old man was admitted to hospital with complaints of trembling hands while holding a cup of tea, difficulty in doing rapid sequential movements, and experiences imbalance while walking. On clinical examination, past pointing was observed.

- i. Give the clinical diagnosis of above condition
- ii. Explain overall functions of the part involved
- iii. What more clinical abnormalities would you expect in the above patient

b. Enumerate layers of retina. Draw a well labeled diagram of visual pathway and explain it. Indicate the effects of lesion in different levels of visual pathway

Q3. Brief Answer Questions

6 x 05 = 30

- a. Define receptor. List properties of a receptor and briefly describe any two of it
- b. Explain the role of gamma motor neuron in the control of muscle tone and activities
- c. Define GFR. Write the factors affecting it
- d. Cardiorespiratory adjustments during exercise in body
- e. Draw schematic diagram to depict direct and indirect pathways of basal ganglia
- f. Write the content and functions of gastric juice. Discuss the factors regulating the secretion of gastric juice

Q4. Short Answer Questions

10 x 2 = 20

- a. Define peristalsis
 - b. What is a motor unit
 - c. Define sarcomere
 - d. Any two properties of synapse
 - e. Content of pancreatic secretion
 - f. Define aphasia
 - g. Lower motor neuron lesion
 - h. Transport maximum for glucose
 - i. Define learning and memory
-

j. Write various steps of excitation contraction coupling mechanism in flow chart

www.FirstRanker.com