

2022

ZOOLOGY

(Honours)

Paper Code : VII - A & B

[Animal Physiology & Biochemistry]

(New Syllabus)

Full Marks : 50

Time : Two Hours

Paper Code : VII - A

(Marks : 10)

Choose the correct answer.

Each question carries 1 Mark.

1. Diastolic blood pressure is mainly determined by —
 - (A) Capillary permeability
 - (B) Venous capacitance
 - (C) Venous elasticity
 - (D) Peripheral resistance
2. Active reabsorption of glucose occurs in —
 - (A) Proximal convoluted tubule
 - (B) Loop of Henle
 - (C) Distal convoluted tubule
 - (D) Collecting duct
3. Electrical transmission of a nerve impulse across a synapse —
 - (A) is slower than chemical transmission
 - (B) requires a neurotransmitter
 - (C) travels faster than chemical transmission
 - (D) has to cross a wider synapse than chemical transmission

4. The polysaccharide with 200-1000 glucose units held by a α -(1 \rightarrow 4) glycosidic linkage only is —
- (A) Starch
 - (B) Amylose
 - (C) Amylopectin
 - (D) Glycogen
5. The number of peptide bonds in a polypeptide of 20 amino acids is —
- (A) 20
 - (B) 19
 - (C) 21
 - (D) None of these
6. The amino acid that does not participate in transamination —
- (A) Lysine
 - (B) Glutamate
 - (C) Alanine
 - (D) Tryptophan
7. Glycogen is converted to monosaccharide units by —
- (A) Glycogen Phosphorylase
 - (B) Glucokinase
 - (C) Glucose 6- Phosphatase
 - (D) Glycogen Synthase
8. Maltose is made up of two glucose molecules, the linkage between them is —
- (A) α 1,2 linkage
 - (B) β 1,2 linkage
 - (C) α 1,4 linkage
 - (D) β 1,4 linkage

(3)

9. The protective covering of lungs is called —

- (A) renal capsule
- (B) pericardium
- (C) cranium
- (D) pleura

10. During muscle contraction calcium binds with —

- (A) tropomyosin
 - (B) troponin C
 - (C) troponin T
 - (D) troponin I
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Paper Code : VII - B

(Marks : 40)

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Unit - I : Animal Physiology

1. Answer any *two* questions : 4×2=8
 - (a) Briefly explain the counter current mechanism of urine concentration.
 - (b) What is colour vision? Illustrate the visual pathway for nerve impulses from retina to the brain. 2+2
 - (c) Describe the structure of a neuron with a labelled diagram.
 - (d) Briefly describe the oxy-hemoglobin dissociation curve.

2. Answer any *one* question : 12×1=12
 - (a) Briefly describe the structure of cochlea with a diagram. State the significance of Reissner's membrane. Define organ of Corti. Describe its structure with diagram. (4+2)+2+1+(2+1)=12
 - (b) With a labelled diagram describe the structure of Sarcomere. Briefly write the process of sliding filament theory of muscle contraction. What is Rigor mortis? (2+3)+5+2=12
 - (c) Write a short note on : 6+6=12
 - (i) Structure of nephron
 - (ii) Electrocardiogram

Unit - II : Biochemistry

3. Answer any *two* questions : 4×2=8
 - (a) Define mutarotation with an example.
 - (b) Write a short note on deamination.
 - (c) Briefly describe the secondary structure of protein.
 - (d) Describe in brief the structure of ATP synthase with a labelled diagram.

4. Answer any *one* question : 12×1=12
 - (a) Classify enzymes based on their mode of reaction along with examples.

(5)

- (b) What is glycosidic bond? Describe the steps involved in the preparatory phase of glycolysis. Add a note on Polysaccharide. 2+6+4
- (c) Write short notes on : 6+6=12
- (i) Glycogenolysis
 - (ii) Phospholipids
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