

Roll No.

Total No. of Questions : 9]
(2034)

[Total No. of Printed Pages : 4

UG (CBCS) IInd Year Annual Examination

2814

B.Sc. ZOOLOGY

(Physiology and Biochemistry)

(DSC-IC)

Paper : ZOOL 201 TH

Time : 3 Hours]

[Maximum Marks : 50

Note :- Attempt *five* questions in all, selecting *one* question from each Section. Question No. **1** is compulsory. Draw neat and well labelled diagrams wherever necessary.

Section-A

(Compulsory Question)

1. Fill in the blank/Choose correct answer :

(i) Apoenzyme and cofactor join to form a

(ii) is smallest known protein.

CH-114

(1)

Turn Over

(iii) Urea cycle operate in :

- (a) Mitochondria of liver cells
- (b) Golgi body of liver cells
- (c) Mitochondria of kidney cells
- (d) Golgi body of kidney cells

(iv) The enzyme ATP synthetase is located in

(v) Aldosterone is secreted by :

- (a) Zona glomerulosa
- (b) Zona fasciculata
- (c) Zona reticulata
- (d) Adrenal medulla

(vi) Process of transformation of spermatid into sperm is called

(vii) Largest leucocytes are

(viii) Glomerular filtration rate (GFR) is about ml per minute.

(ix) F_0-F_1 particles participate in the synthesis of

(x) Intestinal juice is also called $\cdot 1 \times 10 = 10$

CH-114

(2)

~~Succus entericus~~

Section-B

2. (a) Explain the electrical and biochemical changes in muscle contraction.
- (b) Describe saltatory conduction of nerve impulse. 6,4
3. (a) Explain digestion of protein in alimentary canal of man.
- (b) Describe Bohr's effect. Give its physiological significance. 6,4

Section-C

4. (a) Explain the process of urine formation in a nephron.
- (b) Draw a neat and labelled diagram of internal structure of human heart. 6,4
5. (a) Describe the process of spermatogenesis in detail.
- (b) Explain the structure of pancreas. 6,4

Section-D

6. (a) Describe the pentose phosphate pathway in detail. 6,4
- (b) Explain ornithine cycle and its significance. 6,4
7. (a) Define β -oxidation of fatty acid. Enumerate the mechanism of β -oxidation of palmitic acid.
- (b) Differentiate between Glycolysis and Krebs's cycle. 6,4

Section-E

8. (a) Describe the induced fit hypothesis of enzyme action.
- (b) Explain the process of glycogenolysis. 6,4
9. (a) Explain various factors affecting the enzyme activity.
- (b) What is meant by feedback inhibition of an enzyme ? Explain with an example. 6,4

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3115

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[Maximum Marks : 50

Note :- Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is compulsory.

Section-A

(Compulsory Question)

1. Multiple Choice Questions :

(i) Gall Bladder releases bile juice after stimulation from :

(a) Anterocrinin

(b) Vilikinin

(c) Renin

(d) Mucous

CA-315

(1)

Turn Over

- (ii) Structures present in neuron and involved in protein synthesis are :
- (a) Neurofibrils
 - (b) Gated channels
 - (c) Nissl's granules
 - (d) Permeases
- (iii) The volume of air taken in and given out at each normal inspiration and expiration is known as :
- (a) Vital capacity
 - (b) Residual volume
 - (c) Tidal capacity
 - (d) Tidal volume
- (iv) The functional unit of the contractile system in a striated muscle is :
- (a) Sarcomere
 - (b) Aband
 - (c) Zline
 - (d) Myofibril
- (v) Growth hormone is secreted by :
- (a) Thyroid
 - (b) Thyms
 - (c) Adrenal
 - (d) Pituitary
- (vi) Luteal phase is the other name of :
- (a) Follicular phase
 - (b) Proliferative
 - (c) Menstrual flow phase
 - (d) Secretory phase

- (vii) Enzymes with two active sites are known as :
- (a) Apoenzyme (b) Holoenzyme
(c) Allosteric enzyme (d) Proenzyme
- (viii) The Primer Molecule in the process of Biosynthesis of Palmitic acid is :
- (a) Acetic acid (b) Pyruvic acid
(c) Oxaloacetic acid (d) Acetyl Co-A
- (ix) Removal of amino group from an aminated compound like amino acids is called :
- (a) Deamination
(b) Transamination
(c) Both (a) and (b)
(d) None of these
- (x) A nerve impulse leaves a neuron through the :
- (a) Dendrite (b) Cyton
(c) Axon (d) Niss's bodies
- 1×10=10

Section-B

2: (a) Explain how a nerve impulse is propagated along a nerve fibre ?

(b) Describe the physical and chemical changes in the muscle during its contraction. 5+5

Or

3. (a) What are different secretory products in different parts of alimentary canal ? Discuss the nervous and hormonal regulations of these secretions.

(b) Discuss the different factors which influence oxygen transport by haemoglobin. 5+5

Section-C

4. (a) Explain the countercurrent multiplier theory. How is concentrated urine excreted by the kidney?

(b) What is Cardiac Cycle? Describe different stages of cardiac cycle.

5+5

Or

5. (a) What is Menstrual Cycle? Explain the various changes that occur during the cycle.

(b) Why Pituitary gland is known as master gland? Explain the hormone secreted by pituitary gland.

5+5

Section-D

6. (a) Explain Krebs Cycle in detail.

(b) Explain in detail the process of Gluconeogenesis.

5+5

Or

7. (a) Discuss in detail Pentose Phosphate Pathway.

(b) Explain β -oxidation of palmitic acid.

5+5

Section-E

8. (a) Explain Urea Cycle with the enzymes involved in it.

(b) Discuss induced fit theory of Enzyme Action.

5+5

Or

9. (a) Write down the various properties of enzymes.

(b) Explain Oxidative deamination and Transamination.

5+5