This question paper contains 2 printed pages. *Your Roll No. .....*

Sl. No. of Ques. Paper : 1905 **GC-3**
Unique Paper Code : 42234301
Name of Paper : **Physiology and Biochemistry**
Name of Course : **B.Sc. (Prog.) Life Sciences (CBCS)**
Semester : III
Duration : : **3 hours**
Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt five questions in all, two each from Section A and Section B.
Q. No. 1 is compulsory.
Use separate sheets for Section A and Section B.

1.(a) Define the following terms :

(i) Autocrine secretion

(ii) Gluconeogenesis

(iii) Hematocrit

(iv) Induced fit

(v) Compliance (5)

(b) Differentiate between the following pairs of terms:

(i) Somatic and autonomic nervous system

(ii) Glycogenesis and Glycogenolysis

(iii) Chief and Parietal cells

(iv) Oxidative decarboxylation and oxidative phosphorylation

(v) Leakage and ligand-gated channels (10)

(c) Expand the following terms:

(i) FAS

(ii) PTH

(iii) NADPH

(iv) CCK (4)

(d) Give the location and function of the following:

(i) Intercalated cells

(ii) Carnitine acyltransferase I

(iii) Succinate dehydrogenase

(iv) Tropomyosin. (8)

SECTION A

(Attempt any two questions)

2. (a) Describe various lung volumes and capacities in detail.

(b) Briefly explain the arrangement of filaments within a Sarcomere with the help of a well labelled diagram. (7+5)

3. (a) Write in detail about reabsorption and secretion in the Proximal Convoluted Tubule.

(b) Explain the role of bile salts in the digestion and absorption of fats. (8+4)

4. Write short notes on any **three** of the following :

(i) SA node as pacemaker of the heart

(ii) Neuromuscular junction

(iii)Enumerate the various hypothalamic factors that control the release of various pituitary hormones

(iv)Renin-Angiotensin-Aldosterone Pathway (4+4+4)

SECTION B

(Attempt any two questions)

5. (a) Give a detailed account of β oxidation of fatty acids.

(b) Diagrammatically represent the Citric Acid Cycle. (7+5)

6. (a) Give an account of electron transport chain in mitochondria and its role in ATP synthesis.

(b) Differentiate between transamination and deamination. (8+4)

7. Write short notes on any **three** of the following :

(i)Urea Cycle

(ii)Acyl Carrier Protein

(iii)Michaelis Menten equation

(iv)Competitive inhibition (4+4+4)