

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch – MICROBIOLOGY

FUNDAMENTALS OF BIOCHEMISTRY / BIOCHEMISTRY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

- 1 Find out the definition for p^H
(i) \log_{10} (ii) $\log_{10}[H^+]$
(iii) $-\log_{10}[H^+]$ (iv) $-\log_{10}$
- 2 What is the p^H of water?
(i) 1 (ii) 7
(iii) 14 (iv) 0
- 3 Identify the non-reducing sugar
(i) Glucose (ii) Galactose
(iii) Sucrose (iv) Maltose
- 4 Which of the following is the epimer of glucose?
(i) Fructose (ii) Galactose
(iii) Cellulose (iv) Ribose
- 5 Indicate the number of double bonds in arachidonic acid
(i) 2 (ii) 3
(iii) 4 (iv) 5
- 6 What is the molecular formula for cholesterol?
(i) $C_6H_{12}O_6$ (ii) $C_{12}H_{22}O_{11}$
(iii) $C_{27}H_{46}$ (iv) $C_{27}H_{46}O$
- 7 Find out the optically inactive amino acid
(i) Glycine (ii) Lysine
(iii) Alanine (iv) Valine
- 8 Which of the following is a peptide hormone?
(i) Inulin (ii) Insulin
(iii) Cortisol (iv) Thyroxine
- 9 Where do substrate bind to the enzyme?
(i) Active site (ii) Allosteric site
(iii) Regulator site (iv) Coenzyme
- 10 Which is the marker enzyme for mitochondria?
(i) Succinate dehydrogenase (ii) 5'-nucleotidase
(iii) DNA polymerase (iv) Acid phosphatase

Cont...

SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Justify the significance of buffer in biological system.
OR
b Prepare notes on chemical elements in biomolecules.
- 12 a Sketch the types of "Glycoproteins".
OR
b Organize the following:
(1) Reducing and non-reducing sugar (2) Aldosugar and ketosugar
- 13 a Explain the structure and function of cholesterol.
OR
b Show the classification of fatty acids.
- 14 a State the disease in protein malnutrition.
OR
b Evaluate the various functions of proteins.
- 15 a Solve the Michaelis and Menton equation for enzyme action.
OR
b Illustrate on the marker enzyme of liver.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 a Analyze the term "biological solvent". (5)
b Evaluate the characteristics of biomolecules. (5)
- 17 Enumerate the classification of carbohydrate.
- 18 Categorize the sources and biological functions of fat soluble vitamins.
- 19 Construct a detailed notes on structural organization of proteins.
- 20 Elucidate the classification of enzymes.

Z-Z-Z

END