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G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.



UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2024.

(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., BOTANY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
V	PART - III	CORE	U21BO509	BIOCHEMISTRY AND BIOPHYSICS

Date & Session: 08.11.2024 / FN

Time : 3 hours

Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	SECTION - A (10 X 1 = 10 Marks) Answer <u>ALL</u> Questions.
CO1	K1	1.	What is the primary function of a centrifuge? a) To measure temperature b) To separate substances based on density c) To dissolve compounds d) To sterilize equipment
CO1	K2	2.	In a spectrophotometer, what is the role of the monochromator? a) To detect the amount of light transmitted b) To separate light into its component wavelengths c) To amplify the light signal d) To heat the sample
CO2	K1	3.	Which of the following is a simple sugar and a basic unit of carbohydrates? a) Starch b) Cellulose c) Glucose d) Glycogen
CO2	K2	4.	Which polysaccharide is commonly used in the pharmaceutical industry as a thickening agent? a) Glycogen b) Cellulose c) Chitin d) Starch
CO3	K1	5.	Which level of protein structure refers to the unique sequence of amino acids? a) Primary b) Secondary c) Tertiary d) Quaternary
CO3	K2	6.	Which of the following is an essential amino acid? a) Glutamine b) Glycine c) Lysine d) Serine
CO4	K1	7.	What is the primary role of an enzyme in a biochemical reaction? a) To increase the activation energy b) To decrease the activation energy c) To consume the reactants d) To alter the equilibrium constant
CO4	K2	8.	Which method of enzyme immobilization involves attaching the enzyme to a solid support through covalent bonds? a) Adsorption b) Cross-linking c) Entrapment d) Covalent bonding
CO5	K1	9.	What is the primary pigment responsible for capturing light energy in chloroplasts?

			a) Carotenoids b) Phycobilins c) Chlorophyll d) Xanthophyll
CO5	K2	10.	During the light-dependent reactions, what is the primary source of electrons for the electron transport chain? a) Water b) NADPH c) ATP d) Carbon dioxide
Course Outcome	Bloom's K-level	Q. No.	SECTION - B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	11a.	What is the difference between covalent and hydrogen bonds? (OR)
CO1	K3	11b.	List out the applications of spectrophotometer in biological science?
CO2	K3	12a.	Sucrose is a non-reducing double sugar? Explain (OR)
CO2	K3	12b.	Enumerate the main functions of lactose?
CO3	K4	13a.	Explain the structure of an oligomeric protein? (OR)
CO3	K4	13b.	Illustrate the non essential amino acids.
CO4	K4	14a.	Summarize the general classification of enzyme. (OR)
CO4	K4	14b.	Analyze the mechanism of enzyme action.
CO5	K5	15a.	Explain the principle of fluorescence emission? (OR)
CO5	K5	15b.	Enumerate the basic principle of electromagnetic spectrum?

Course Outcome	Bloom's K-level	Q. No.	SECTION - C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	16a.	Explain the principle, techniques and their application of paper chromatography? (OR)
CO1	K3	16b.	Expound the main principle, techniques and their application of centrifuge?
CO2	K4	17a.	Describe the structure and properties of Monosaccharides. (OR)
CO2	K4	17b.	Discuss the properties of Polysaccharides.
CO3	K4	18a.	Compute the classification of Essential amino acids. (OR)
CO3	K4	18b.	Describe the structure and properties of a monomeric protein?
CO4	K5	19a.	Predict the application of enzymes in industry. (OR)
CO4	K5	19b.	Describe the structure and properties of Lipids.
CO5	K5	20a.	Is ATP is an energy rich compound? Prove it. (OR)
CO5	K5	20b.	Describe the structure of Mitochondria.