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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
IV	PART - III	CORE	U21BO406	CELL AND MOLECULAR BIOLOGY

Date & Session: 14.11.2024/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.	Who proposed cell theory. a) Schwann b) Alferd c) Pasteur d) Jeffrey
CO1	K2	2.	Cystolith is formed by the deposition of _____ particles. a) Calcium carbonate b) Calcium oxalate c) Carbon dioxide d) Ethylene bromide
CO2	K1	3.	Which is the protein factory of the cell. a) Mitochondria b) Golgi Apparatus c) Ribosomes d) Endoplasmic Reticulum
CO2	K2	4.	Which one is power house of the cell? a) Nucleus b) Cytoplasm c) Vacuoles d) Mitochondria
CO3	K1	5.	DNA is a polymer of. a) Aminoacids b) Nucleotides c) Unsaturated Fatty Acids d) None
CO3		6.	Which is soluble RNA. a) tRNA b) mRNA c) dRNA d) rRNA
CO4	K1	7.	What is the Central Dogma of Molecular Biology? a) Structure of DNA and RNA b) The process of protein folding c) Formation of DNA from RNA d) Replication, transcription and translation
CO4	K2	8.	What is DNA replication? a) Conservative b) Non-conservative c) Semi-conservative d) None
CO5	K1	9.	The process of conversion of RNA into Protein are called. a) Replication b) Transcription c) Dogma d) Translation
CO5	K2	10.	The enzyme required for DNA replication is? a) DNA Ligase b) DNA Helicase c) DNA dependent Polymerase d) Restriction Endonuclease

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	11a.	List down the general characters of cell theory. (OR)
CO1	K3	11b.	Construct the fluid-mosaic model of Plasma Membrane.
CO2	K3	12a.	Using a neat labelled sketch on the structure of Mitochondria. (OR)
CO2	K3	12b.	Interpret the cell cycle.
CO3	K4	13a.	Write short notes on Griffith's experiment. (OR)
CO3	K4	13b.	Comment on structure of RNA.
CO4	K4	14a.	Construct the gene regulation in Prokaryotes. (OR)
CO4	K4	14b.	Write short notes on the central dogma of molecular biology.
CO5	K5	15a.	Estimate the process of Translation. (OR)
CO5	K5	15b.	Formulate the Transcriptional factors (Enhancers, silencers).

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	16a.	Tabulate the distinguish between Prokaryotic cell and Eukaryotic cell. (OR)
CO1	K3	16b.	Comment on Cystolith and Raphides.
CO2	K4	17a.	Organize the structure of Chloroplast and its function. (OR)
CO2	K4	17b.	Compute the mitosis cell divisions and their significance.
CO3	K4	18a.	Explain the DNA as genetic material. (OR)
CO3	K4	18b.	Analyse the Hershey-Chase experiment.
CO4	K5	19a.	Discuss in detail about gene regulation in Eukaryotes. (OR)
CO4	K5	19b.	Illustrate about the process of Lambda Phage.
CO5	K5	20a.	Discuss in detail on the types of RNA Polymerase. (OR)
CO5	K5	20b.	Forecast the Post transcriptional modification in Eukaryotes.