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BBT301

Third Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Cell Biology and Genetics

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Distinguish between prokaryotic and eukaryotic cell with respect to the structural and functional aspects.	10	L2	CO1
	b.	Distinguish between microtubules and microfilaments.	10	L2	CO1
OR					
Q.2	a.	Compare Rough and Smooth Endoplasmic reticulum with diagrams.	10	L3	CO2
	b.	Lysosomes are critical for cell metabolism maintenances. Do you agree? Whether Yes/No. Justify.	10	L2	CO1
Module – 2					
Q.3	a.	Distinguish between Apoptosis and Necrosis. Justify the importance in all organisms.	10	L3	CO2
	b.	Distinguish between Autocrine, Paracrine and endocrine signalling.	10	L2	CO2
OR					
Q.4	a.	Do you think the check points regulate cell cycle? Justify whether Yes/No.	10	L2	CO2
	b.	How do the different stages of cancer differ from one another?	10	L2	CO2
Module – 3					
Q.5	a.	How does active transport differ from passive transport?	10	L3	CO2
	b.	Distinguish between endocytosis and exocytosis.	10	L2	CO2
OR					
Q.6	a.	The endoplasmic reticulum maintains quality control of protein folding. Do you agree? Whether Yes/No justify.	10	L2	CO2
	b.	Give an account of how viruses and toxins enter the cell.	10	L1	CO1
Module – 4					
Q.7	a.	Distinguish between law of segregation and law of independent assortment.	10	L2	CO2
	b.	Distinguish between dominant and recessive epistatis with examples.	10	L2	CO3
OR					
Q.8	a.	Distinguish between heterochromatin and euchromatin with respect to its structure and function.	10	L3	CO4
	b.	How do the polytene and lampbrush chromosomes differ from one another.	10	L2	CO1
Module – 5					
Q.9	a.	Variation in number of sex chromosomes results in syndromes. Do you agree? Whether Yes/No. Justify.	10	L1	CO4
	b.	Distinguish between XX-XY and ZZ-ZW system of sex determination.	10	L2	CO4
OR					
Q.10	a.	Distinguish between Turner syndrome and Down's syndrome.	10	L3	CO3
	b.	Distinguish between spontaneous and induced mutations.	10	L2	CO3

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