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GIET UNIVERSITY, GUNUPUR – 765022
 B. Tech (Third Semester) Examinations, December – 2023
21BBSBS230B1 / 22BBSBS230B1 – Basics of Biology
 (Biotech)

Time: 3 hrs

Maximum: 70 Marks

Answer all questions
(The figures in the right hand margin indicate marks)

PART – A**(2 x 5 = 10 Marks)**

Q.1. Answer <i>ALL</i> questions	CO #	Blooms Level
a. How do nucleus in cell manage control and coordination among all other organelles?	CO1	K2
b. Differentiate between prokaryotic and eukaryotic chromosomes.	CO1	K3
c. How many daughter cells are produced after mitosis and meiosis respectively?	CO2	K1
d. What is the difference between homozygous and heterozygous individuals?	CO3	K3
e. What are the conditions of Hardy-Weinber's equilibrium?	CO4	K1

PART – B**(15 x 4 = 60 Marks)**Answer *ALL* questions

	Marks	CO #	Blooms Level
2. a. Diagrammatically describe the ultrastructure and function of different parts of the prokaryotic cell.	7	CO1	K3
b. Describe the structure and functions of these organelles.	8	CO1	K2
(OR)			
c. Describe the chemical composition and ultrastructure of cell walls in plants.	7	CO1	K2
d. Describe the structure and function of different types of cytoskeletons.	8	CO1	K2
3.a. Describe the mechanism of different types of membrane transport with appropriate examples.	8	CO2	K2
b. Describe different types of cell signalling pathways with examples.	7	CO2	K2
(OR)			
c. Describe the mechanism of protein sorting and targeting.	8	CO2	K2
d. Write an essay on mitotic division in animal cells.	7	CO2	K2
4.a. Discuss the laws of Mendelian inheritance of characters by taking suitable examples.	7	CO3	K2
b. Describe polygenes and multiple alleles with suitable examples.	8	CO3	K2
(OR)			
c. Describe the pattern of inheritance of colour blindness and haemophilia with suitable examples.	7	CO3	K2

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| d. | Write a note on how linkage and crossing over break the principle of the law of independent assortment of two characters. | 8 | CO3 | K2 |
| 5.a. | Write a note on the origin, evolution and diversification of life on earth. | 8 | CO4 | K2 |
| b. | Discuss the effect of different evolutionary forces on genetic equilibrium of a population. | 7 | CO4 | K2 |

(OR)

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|----|---|---|-----|----|
| c. | Describe the principles of breeding in plants. | 7 | CO4 | K2 |
| d. | Write a note on the morphology, life cycle and chromosomal arrangement of <i>Drosophila melanogaster</i> . Why is it taken as a model organism in the developmental genetics of eukaryotes? | 8 | CO4 | K2 |

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