

Physiology [Honours]
[CBCS]
B.Sc. Fifth Semester End Examination-2023
(Regular & Supplementary Paper)
PAPER-C12T

Full Marks: 40

Time: 02 Hrs

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Group A

1. Answer any FIVE questions of the following: **5x2= 10**
- a) What do you mean by silent and non sense mutation?
 - b) What are the needs for regulation of gene expression?
 - c) What is Shine-Dalgarno sequence?
 - d) Differentiate between euchromatin and heterochromatin.
 - e) What are restriction enzymes?
 - f) Mention the role of sigma factor in the initiation of prokaryotic transcription.
 - g) What is semiconservative DNA replication?
 - h) What are oncogenes?

(2)

Group B

2. Answer any FOUR questions of the following: 4x5 = 20

- a) Differentiate between transition and transversion mutation. What is frameshift mutation? Give an example. 2+2+1
- b) Mention the names and functions of various proteins and enzymes required for the initiation of prokaryotic DNA replication. 4+1
- c) Discuss how lac operon operates in presence of and absence of lactose. What is karyotype? 4+1
- d) Explain the degeneracy property of genetic code with the help of wobble hypothesis.
- e) What is cell cycle? Schematically represent different phases of cell cycle.
- f) What is the importance of crossing over? What are linked genes?

Group C

3. Answer any ONE question of the following: 1x10 = 10

- a) Explain the nucleosome model of DNA packaging. What is metastasis? Mention the important properties of a cancer cell. 5+2+3
- b) Describe the process of translation in prokaryotes. Name two mutagens. Write down two general features of genetic code. 6+2+2
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