K23P 0460

Reg. No. : .....

Name : .....

II Semester M.Sc. Degree (CBSS – Reg./Supple./Imp.) Examination, April 2023
(2019 Admission Onwards)
BOTANY
BOT2C08 : Cell and Molecular Biology

Time : 3 Hours Max. Marks : 60

I. Answer **any two** of the following. **(2×8=16)**

1) Write notes on the evolutionary significance of chromosomal aberrations. Add a note on the origin of Down syndrome and Kleinfelter syndrome.

OR

2) Explain the mechanism of protein targeting to any four cell organelles in eukaryotes.

3) Describe in detail, the process of homologous recombination at the molecular level.

OR

4) How does initiation of translation take place in eukaryotes ? Compare and contrast it with that of a prokaryotic system.

II. Answer **any two** of the following. **(2×6=12)**

5) a) What is cell cycle regulation ? **1**
b) How is cell cycle regulated ? **2**
c) Describe the check points. **3**

6) a) What are carcinogens ? **1**
b) Write an account on cancer and food. **2**
c) Write notes on genetic basis of cancer. **3**

7) a) What is the role of primer in DNA replication ? **1**
b) Name the DNA polymerases in prokaryotes and comment on the role of each. **2**
c) What do you mean by end replication problem in eukaryotes ? How is it solved ? **3**

P.T.O.

III. Answer **any six** of the following. **(6×3=18)**

8) Write notes on repetitive DNA.
9) What do you mean by aging ? State the significance.
10) Comment on cadherins and integrins.
11) Discuss the role of tumour initiators and tumour promoters.
12) Comment on DNA replication disorders.
13) Describe the processing of tRNA and rRNA.
14) Write notes on retrotransposons and L1 elements.
15) Explain gene action regulation in the post transcriptional level.

IV. Answer **any seven** of the following. **(7×2=14)**

16) Describe the organization of telomere. What is its unique feature ?
17) Describe the structure of nucleosomes.
18) Describe the role of motor proteins in cell division.
19) What is retinoblastoma protein ? How does it work ?
20) Describe Robertsonian translocation.
21) Distinguish between isochromosomes and pseudoisochromosomes.
22) Differentiate between replicative and nonreplicative transposons.
23) Write the names of the proteins involved in prokaryotic DNA replication.
24) Draw the diagram of *trp* operon.
25) Describe *rho* dependent termination of transcription.

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