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(Pages : 2)

Name.....

Reg. No.....

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2018

(CUCSS—PG)

Botany

BOO 2C T05—CELL BIOLOGY, MOLECULAR BIOLOGY AND BIOPHYSICS

(2010 Admissions)

Time : Three Hours

Maximum : 36 Weightage

Answer *all* the questions briefly. Each question carries 1 weightage :

1. What is the role of cyclin D and Cdk4 ?
2. Differentiate constitutive and facultative heterochromatin.
3. Write notes on tumour suppressor genes.
4. What are antimutator genes ?
5. Write an account on carcinogens.
6. What are laminin proteins ?
7. Comment on genome complexity and C-value paradox.
8. Bring out the contributions of Rosalind Franklin.
9. Differentiate minisatellites and microsatellites.
10. What are chaperons ? What is its role ?
11. Describe the structure of RNA polymerase in prokaryotes.
12. Explain opposite polarity of double stranded DNA.
13. Write notes on lyophilisation.
14. State Beer Lambert's law.

(14 × 1 = 14 weightage)

Answer any *seven* questions in not more than 100 words each. Each question carries 2 weightage :

15. Write an account on the genetic basis of malignant transformation.
16. Describe the molecular mechanisms of cellular differentiation.
17. Describe in detail the structure of synaptonemal complex. What is its significance ?
18. Write an account on chromosome banding and the significance.
19. Explain the organization of eukaryotic chromatin.
20. List out the enzymes and their role in DNA replication.

Turn over

21. Distinguish between 'rho' dependent and 'rho' independent termination of transcription.
22. Write a detailed account on post translational modifications of proteins.
23. Write a note on mutation and cancer with special reference to 'c-oncs'.
24. What is electrophoresis? Illustrate the process with an example.

(7 × 2 = 14 weightage)

Answer any *two* questions in 300 words each. Each question carries 4 weightage :

25. Describe different stages in meiosis with the help of diagrams. Comment on the significance.
26. Explain replication of DNA in prokaryotes. How does replication in eukaryotes differ from that in prokaryotes?
27. Write an essay on the principle of autoradiography, the procedure and different types. Add a note on its applications in biological research.
28. Describe regulation of gene expression in eukaryotes.

(2 × 4 = 8 weightage)