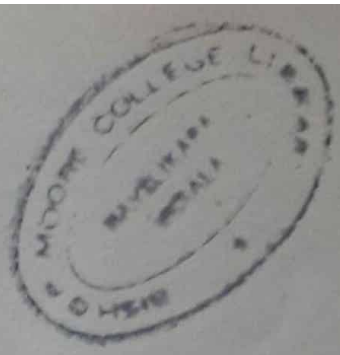
(Pages : 3)



L – 1625

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, ,March 2021

First Degree Programme under CBCSS

Botany

Core Course

BO 1642 : MOLECULAR BIOLOGY, GENERAL INFORMATICS AND BIOINFORMATICS

(2015 –2017 Admission)

Time : 3 Hours

Max. Marks : 80

I Answer **all** the questions. Write short notes on the following

1. Why the bond connecting the nucleotides in DNA is called as 'ester' bond?
2. What is satellite DNA?
3. Cite an example of a local alignment tool
4. Define recon
5. Differentiate between 'bit' and 'byte'
6. Name any one operating systems commonly used in desktop computers
7. Expand ROM
8. Name the different types of rRNA associated with the small subunit of prokaryotic ribosomes

P.T.O

9. What is the main application of PHYLIP?

10. During DNA replication which enzyme catalyses breakage of hydroge connecting the two strands of DNA?

(10 × 1 = 1

II. Answer any **eight** of the following

11. Mention the major structural difference between purines and pyrimidi one example each for purines and pyrimidines.

12. Write an account on the removal of thymine dimers in DNA

13. Why an RNA polymerase is required in DNA replication?

14. Write the general structure of an amino acid

15. Write the roles played by (a) SSB proteins and (b) topoisomerase replication

16. The chemical analysis of a double stranded DNA molecule revealed contains 20% thymine. Find out the percentages of the other bases.

17. Write a note on cyber ethics

18. Enumerate the major applications of information technology

19. Differentiate between exons and introns

20. Differentiate between primary and secondary databases

21. Write an account on the various computer-output devices

22. Differentiate between global and local sequence alignments.

(8 × 2 = 16 M

III. Answer any **six** of the following

23. Write any four RASMOL commands and their purpose

24. Write an account on model organism databases

25. What is multiple sequence alignment? Mention its application

26. Write an account on copyrights and patents

27. Citing an example explain transcriptional level gene regulation in prokaryotes

28. During DNA replication why the new strands are synthesized in opposit directions on the two DNA templates?

29. Write an account on RNA interference

30. What are promoters? Mention the functions of promoters. Name any tw prokaryotic promoters.

31. With the help of a labeled sketch explain the clover leaf model of tRNA structure

(6 × 4 = 24 Mark

IV. Write essay on any **two** of the following.

32. Write an essay on biological databases

33. Describe the applications of Excel and PowerPoint

34. Explain the experiment which proved that the DNA replication is s conservative

35. Describe the steps involved in prokaryotic transcription

(2 × 15 = 30 Ma