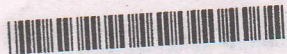


K18U 0935



Reg. No. :

Name :

IV Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.) Examination, May 2018
(2014 Admn. Onwards)

GENERAL COURSE IN MICROBIOLOGY
4A13MCB : Molecular Biology

Max. Marks : 40

Time : 3 Hours

SECTION – A

Answer **all** the questions. **Each** question carries **one** mark.

1. In most mRNAs, the start (initiator) codon is _____
2. The DNA molecule of humans contains approximately 30% adenine. The percentage of guanine is _____
3. In eukaryotes, the 5' end of the newly synthesized mRNAs are modified by a _____

(4×1=4)

4. Catalytic RNAs are called _____

SECTION – B

Answer **any 7** questions. **Each** question carries **two** marks.

5. What is the difference between topoisomerase I and topoisomerase II ?
6. What is hyperchromicity ?
7. In eukaryotes, the mature mRNA is much shorter than the gene from which it is synthesized. Why ?
8. What are Okazaki fragments ?
9. What is Wobble hypothesis ?
10. Write a brief account on transposons.

P.T.O.

K18U 0935



11. Mention the biological functions of three types of RNA polymerases in eukaryotes.
12. What is the importance of 3'-5' exonuclease activity of DNA polymerase ?
13. Write a short note on TATA box.
14. What is the biological function of aminoacyl tRNA synthetases ? (7×2=14)

SECTION – C

Answer **any 4** questions. **Each** carries **three** marks.

15. Explain semiconservative method of DNA replication with the support of experimental evidence.
16. Describe RNA processing in eukaryotes.
17. What are nucleotides ? Compare ribonucleotides and deoxyribonucleotides.
18. Describe the structure of tRNA molecule.
19. What are the characteristics of genetic code ?
20. Describe the structure of bacterial ribosomes. (4×3=12)

SECTION – D

Answer **any 2** questions. **Each** carries **five** marks.

21. Explain the control of gene expression with reference to *lac* operon.
22. Explain any two types of DNA repair mechanisms in prokaryotes.
23. Explain the process of DNA replication in prokaryotes.
24. Describe the structure of chromatin fiber in eukaryotes. (2×5=10)