

**THIRD SEMESTER B.Sc. (MICROBIOLOGY) DEGREE EXAMINATION
NOVEMBER 2012**

(CCSS)

Core Course

MB 3B 04—MICROBIOLOGY—MOLECULAR MICROBIOLOGY

Time : Three Hours

Maximum : 30 Weightage

Part A*Choose the correct answer from the following, weightage for each answer is 4.*

1. Which among the following is the genetic code for methionine ?
(a) AUG. (b) UUU.
(c) CUG. (d) AAA.
2. The bacterium used in Griffith experiment was :
(a) *Mycobacterium tuberculosis*. (b) *Staphylococcus aureus*.
(c) *Streptococcus pneumoniae*. (d) *Pseudomonas aeruginosa*.
3. In Trp operon, tryptophan act as :
(a) Activator. (b) Corepressor.
(c) Both (a) and (b). (d) None of the above.
4. At which stage of mitosis, the chromosomes become shorter, thicker and migrate towards the opposite poles of the cell.
(a) Anaphase. (b) Prophase.
(c) Metaphase. (d) Telophase.

Fill in the blanks of the following, weightage for each answer is 1/4.

5. The RNA polymerase present in prokaryotic cells consist of _____ subunits.
6. The lowest level of chromosome organisation is called as _____
7. In lac operon, lactose act as _____
8. The process by which homologous chromosomes become joined to one another during the zygotene stage is called _____

Answer in single word of the following, weightage for each answer is 1/4.

9. The width of DNA double helix is _____
10. Enzymes which can change the supercoiled state of DNA are called as _____

Turn over

11. Three types of RNA polymerases function in eukaryotes. Which one is responsible for mRNA synthesis ?
12. The five distinct classes of histones can be distinguished more easily by their content of _____

(12 x 3 = 36 weightage)

Part B

Explain all the following nine questions, weightage for each answer is 1.

13. Nucleotides.
14. Law of dominance.
15. Telophase.
16. Function of mRNA.
17. Pribnow box.
18. Spliceosome.
19. Rho factor.
20. z-RNA.
21. Amino acyl t-RNA.

(9 x 1 = 9 weightage)

Part C

*Write short essay on any five questions, from the following.
Weightage for each answer is 2.*

22. Promoter.
23. D loop replication.
24. Nucleoid.
25. Mitosis.
26. RNA polymerases.
27. Histones.
28. r-RNA.

(5 x 2 = 10 weightage)

Part D

*Write essay on any two questions from the following.
Weightage for each answer is 4.*

29. Explain Lac operon.
30. Describe DNA replication in Eukaryotes.
31. Describe the structure of DNA.

(2 x 4 = 8 weightage)