

**D 31081**

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Name.....

Reg. No.....

**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  $\frac{1}{4}$ .

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*.

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 **miyrate** towards the opposite poles of the **ieu**.

- (a) Anaphase. (b) Prophase.  
(c) Metaphase. (d) **Telophase**.

Fill in the blanks of the following, **weightage** for each answer is  $\frac{1}{4}$ .

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  $\frac{1}{4}$ .

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 **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**)