C 5156 **(Pages : 2)** **Name**

Reg. No. . . . . .

FOURTH SEMESTER B.Sc. DEGREE (SUPPLEMENTARY/IMPROVEMENT) EXAMINATION, MAY 2016

(UG–CCSS)

Biotechnology – Core Course

BT 4B **01—** MICROBIAL GENETICS

Time : Three Hours Maximum : 30 Weightage

I. Objective Type Questions. Answer *all* questions :

A. Name the following :

1. A technique in which electricity is used to make cells competent.
2. The process of naked DNA can be taken up into the cell.
3. A virus which infects bacterial cell is known as.
4. Who first discovered Mobile genetic element ?
5. Enzyme used to cut DNA at specific site.
6. Largest virus.

B. Select the correct answer :

7. Which is associated with genetic exchange in bacteria?

(a) Capsule. (b) Endospore.

(c) Flagella. (d) Pili.

8. A retro virus causing disease is :

(a) Influenza. (b) Hepatitis.

(c) HIV. (d) Mums.

9. Name the bacterium known as natural genetic engineer of plants :

(a) Rhizopus. (b) Pseudomonas.

(c) Agrobacterium tumefaciens. (d) Bacillus.

10. A spontaneous mutation usually originates as an error in :

(a) DNA replication. (b) DNA transcription.

(c) Translation. (d) Reverse transcription.

11. What is the physical basis of mutational hot spots ?

(a) Transposons. (b) Tautomers.

(c) Palindromes. (d) Transitions.

Turn over

12. Negri bodies are associated with :

(a) Aseptic meningitis. (b) Rubella.

(c) Mumps. (d) Rabies.

(12 x ¼ = 3 weightage

II. Short Answer Type Questions. Answer all *nine* questions :

13. Plaque.
14. Salmonella typhimurium.
15. Rubella.
16. Illegimate recombination.
17. IS element.
18. T_4 DNA ligase.
19. In vitro packaging.
20. Mutational hotspots.
21. Auxotroph.

(9 x 1 = weightage)

III. Short Essay *or* Paragraph Questions. Answer any *five* of the following :

22. Write on genome organisation and map of T_4 phage.
23. Explain Time scale experiment.
24. Discuss a—complementation.
25. Give an account on chemical mutagens.
26. Explain terminator gene technology.
27. Discuss Generalized *vs.* Specialized transduction.
28. Explain the structure of Bacteriophage.

(5 x 2 = 10 weigh

IV. Essay Questions. Answer any *two* out of three :

29. What are transposable elements ? Write on different types and their application.
30. Give classification of Bacteriophages.
31. Gene transfer mechanisms in bacteria and explain how it useful in gene mapping.

(2 x 4 = 8