

B. Sc. DEGREE EXAMINATION, NOVEMBER 2018
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR – CORE
PAPER : MICROBIOLOGY
TIME : 3 HOURS

MAX.MARKS:100

SECTION – A

ANSWER ALL QUESTIONS

(18 Marks)

I. Choose the correct answer

(5x1=5)

1. Salt and sugar preserve food because they
 - a) make them acidic
 - b) deplete nutrients
 - c) produce a hypotonic environment
 - d) produce a hypertonic environment
2. Bacterial conjugation was discovered by
 - a) Griffith
 - b) Beadle and Tatum
 - c) Lederberg and Tatum
 - d) None of the above
- 3) Father of microbiology is
 - a) Pasteur
 - b) Koch
 - c) Leeuwenhoek
 - d) Lister
- 4) Mesosomes are also known as
 - a) Chondroids
 - b) Plasmids
 - c) Mitochondria
 - d) Endoplasmic reticulum
- 5) During bacterial conjugation, genetic material will be transferred through
 - a) Pili
 - b) Fimbriae
 - c) Capsule
 - d) Flagella

II. Fill in the blanks:

(5x1=5)

6. Vaccination was discovered by the scientist _____.
7. Agar is obtained from the seaweed _____ .
8. _____ discovered penicillin from *Penicillium* .
9. Effluent which is mixed with air & sludge loaded with bacteria is termed as _____.
10. _____ is a genus of bacteria that causes foodborne illness when a person consumes contaminated meat or poultry.

III. True or False

(4x1=4)

11. The starter inoculum of VAM fungi can be isolated from soil by wet sieving and decantation.
12. *Nitrosomonas* carries out anaerobic reduction of ammonia to nitrate.
13. Composting is when microbes break down organic matter to produce carbon dioxide, water and heat.
14. TMV has a icosahedral capsid.

IV. Match the following (4x1=4)

- | | |
|----------------------------|-----------------------------|
| 15. Citrus canker | Potato spindle tuber viroid |
| 16. Little leaf of brinjal | Banana bunchy top virus |
| 17. Bunchy top of banana | <i>Xanthomonas citri</i> |
| 18. Potato spindle tuber | <i>Phytoplasma</i> |

V. Answer any six questions, each answer not exceeding 50 words (6x3=18)

19. Bergey's Manual
20. Endospore
21. Prions
22. VAM fungi
23. Differential media
24. Botulism
25. PFU
26. Germ theory of disease
27. Sterilisation

SECTION - B

ANSWER ANY FOUR QUESTIONS EACH ANSWER SHOULD NOT EXCEED 200 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY (4x6=24)

28. Describe the phases in a bacterial growth curve.
29. Enumerate upon the 3 steps in which water is purified, treated and made potable.
30. What are the symptoms and control measures of citrus canker?
31. Highlight the importance of Whittaker's five kingdom theory in bacterial taxonomy.
32. Elaborate upon the morphology of a typical bacterial cell.
33. Describe replication in Tobacco Mosaic Virus.

SECTION - C

ANSWER ANY TWO QUESTIONS EACH ANSWER SHOULD NOT EXCEED 1000 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY (2x20=40)

34. Write an essay on the general properties and structure of viruses.
35. Compare and contrast gram positive and gram negative bacterial cell wall. Illustrate wherever necessary.
36. Enumerate upon wastewater/sewage treatment.
37. Write an essay bringing out how microbes are controlled by physical and chemical agents.
