Register Number……

B.TECH., DEGREE EXAMINATIONS: NOV/DEC 2012

Third Semester

BIO TECHNOLOGY

BTY105: Microbiology

Time: Three Hours **Maximum Marks: 100**

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. Dalton refers to the mass of any substance equivalent to the mass of one atom of the following substance

   a. carbon b. hydrogen c. oxygen d. nitrogen

2. Conventional specifications of pasteurization is

   a. 72 ºC for 30 minutes b. 72 ºC for 15 secs

   c. 63 ºC for 15 minutes d. 63 ºC for 30 minutes

3. Outer most layer of cell envelope of archaebacteria an some eubacteria that promotes adherence to surfaces is

   a. peptidoglycan b. S-layer c. Lipopolysaccharide d. plasmamembrane

4. Which of the following is an endotoxin?

   a. O-polysaccharide b. N-acetylmuramic acid c.N-acetylglucosamine d. Lipid-A

5. Which of the following is correct in case of anaerobic respiration

   a. Final electron acceptor is oxygen

   b. Final electron acceptor is endogenous terminal molecule

   c. Final electron acceptor is nitrate

   d. Final electron acceptor is methane

6. Photoorganotrophic bacteria uses

   a. chemical energy, electron and organic carbon b. light, electron & CO_2

   c. chemical energy, hydrogen and organic carbon d. light, hydrogen & CO_2

7. Psi in autoclaving refers to

   a. pressure per square inch b. pound force per square inch

   c. pressure force per square inch d. pressure square inch

8. Sulfanilamide precursor is used to synthesize

   a. folic acid b. acetic acid c. ascorbic acid d. palmic acid

9. The viable cell count of biofertilizer per gram of powder is

a. $5x10^5$ cells b. $6x10^5$ cells c. $6x10^7$ cells d. $5x10^7$ cells

10. Enzyme that makes the active toxin in Bt is

a. cellulase b. pectinase c. protease d. chitinase

PART B (10 x 2 = 20 Marks)

11. How contamination leads to the discovery of antibiosis?

12. Why actinomycetes are not classified under fungi?

13. What are endospores? Which bacteria produce and for what purpose?

14. At what circumstances pseudhypahe is formed in yeast?

15. What are the essential nutrients that are required for bacterial growth?

16. Write short note on selective and enrichment media with examples.

17. Distinguish fermentation and pasteurization.

18. State the differences between toxin and toxoid.

19. What is activated sludge?

20. How Biopesticide differs from Chemical pesticide in their action?

PART C (5 x 14 = 70 Marks)

21. a) What is special staining? Explain the principle and applications of bacterial capsule, flagella and endospore staining.

(OR)

b) Explain the principle behind electron microscopy. Elaborate on the distinguishing features of TEM and SEM.

22. a) Elucidate the structural dissimilarities of gram positive and negative bacteria with a neat sketch.

(OR)

b) What are Yeasts? Explain its structure, life cycle and uses.

23. a) Explain the direct and indirect methods for quantitating bacterial population.

(OR)

b) List the types of media for the growth of bacteria with examples.

24. a) Explain the mode of action of antimicrobial agents with a neat sketch.

(OR)

b) Explicate the host microbial interaction with an intensive sketch.

25. a) Explain the role of microorganisms and biosensor in pollution control.

(OR)

b) What is a biofertilizer? What type of micooorganism is used as microbial inoculants? Add a note on its significance.

****