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18BT32

Third Semester B.E. Degree Examination, Aug./Sept.2020 Microbiology

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What are the contributions of Louis Pasteur and Robert Koch towards the growth of microbiology? (10 Marks)
- b. Write short notes on :
 - i) Scope and branches of microbiology
 - ii) Numerical taxonomy. (10 Marks)

OR

- 2 a. Give an account on the general characteristics of prions and actinomycetes. (10 Marks)
- b. Distinguish between prokaryotes and eukaryotes. (05 Marks)
- c. Write a short note on Bacterial cell wall. (05 Marks)

Module-2

- 3 a. With labeled diagrams, explain the principle and working of electron microscope. (10 Marks)
- b. Discuss the various methods of sterilization by heat. (10 Marks)

OR

- 4 a. What is Pure Culture? Discuss any two methods to obtain pure culture. (10 Marks)
- b. Write short notes on :
 - i) Micrometry
 - ii) Differential stain. (10 Marks)

Module-3

- 5 a. Explain TCA cycle with its energy balance sheet. (10 Marks)
- b. How will the growth curve pattern change when the medium is supplemented with glucose and lactose? Justify your answer. (06 Marks)
- c. Write short notes on Synchronous growth. (04 Marks)

OR

- 6 a. Explain the fate of pyruvate under anaerobic conditions. (10 Marks)
- b. Write short notes on :
 - i) Primary metabolism
 - ii) Factors affecting growth. (10 Marks)

Module-4

- 7 a. Give an account of the pathogenesis of Mycobacterium leprae. Add a note on its diagnosis and treatment. (10 Marks)
- b. Discuss the causative organism, pathogenesis, symptoms and clinical diagnosis of tuberculosis. (10 Marks)

OR

- 8 Write short notes on :
 - a. H1N1
 - b. Hepatitis
 - c. Rabies
 - d. Plasmodium vivax. (20 Marks)

Module-5

- 9 a. Define Biogeochemical cycle. Explain nitrogen cycle highlighting the role of microorganisms. (10 Marks)
b. What are Biofertilizers? Explain the role of Rhizobium and VAM as biofertilizers. (10 Marks)

OR

- 10 a. Discuss the various types of air samplers. Add a note on the importance of air sampling. (10 Marks)
b. Write short notes on :
i) Rhizosphere ii) MPN. (10 Marks)

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