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HEF-1

Seat No. _____

M. Sc. (Biotechnology) (Sem. I) (CBCS) Examination

November / December – 2017

BT - 101 : Microbiology

(Core)

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory.

(2) Support your answers with suitable illustrations where required.

1 Answer Any **Seven** : **2×7=14**

(1) Explain the mode of action of UV radiation in sterilization.

(2) Differentiate between chemostat and turbidostat.

(3) What is LD_{50}?

(4) Explain role of plasmid and bacteriophages in the process of infection

(5) Explain in brief: the mode of action of endotoxins

(6) Differentiate between generalized and specialized transduction.

(7) What is competence factor? How to induce it in vitro?

(8) What are retroviruses? Give any three Examples.

(9) Briefly explain the mechanisms of drug resistance?

(10) Explain: ADMET.

2 Answer any **three** of the following : **5+5+4=14**

(a) Write on the various methods of preservation & maintenance of pure culture.

(b) Explain in detail: Synchronous growth

(c) Describe various Virulence factors.

(d) Differentiate between endotoxins and exotoxins.

3 Answer the following : **7×2=14**

(a) Explain the molecular basis of mating and transfer of DNA in E.coli

(b) Discuss recombination and its implications in bacteria

OR

3 Answer the following : **5+5+4=14**

(a) F-mediated sex -duction

(b) Suppressor mutants

(c) Defective phage particle

4 Write in detail on : **7×2=14**

(a) Describe plant viruses with respect to their characteristics and mode of infection

(b) Describe antibiotics specifically acting against protozoan and fungi

5 Write comments on Any **Two** of the following : **7×2=14**

(a) Provide details of reverse transcription process in HIV

(b) Describe Aminoglycosides antibiotics with its mode of Action.

(c) Elaborate on the antibiotics affecting cell-wall synthesis? Explain any one of β-lactam Antibiotics with suitable example.

(d) Provide an account on the development of antibiotic resistance