

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT**

**TEST-2 EXAMINATIONS-2022**

M.Sc.-I Semester (Microbiology)

COURSE CODE (CREDITS): **21MS1MB111**

MAX. MARKS: 25

COURSE NAME: **General Microbiology and Bacteriology**

COURSE INSTRUCTORS: **Dr. Ashok Kumar Nadda** MAX. TIME: 1 Hour and 30 minutes

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*Note: All questions are compulsory. Marks are indicated against each question in square brackets.*

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**Section I**

**Q 1. Answer the following questions.**

- a) Give examples of each broad & narrow spectrum antibiotics? **(Mark 1)**
- b) What are biguanides? What are their uses? **(Mark 1)**
- c) How does the hydrogen peroxide, peracetic acid, benzyl peroxide and ozone exert their antimicrobial effects? **(Mark 1)**
- d) Among the prions and enveloped viruses which one is most resistant towards chemical biocides and why? **(Mark 1)**
- e) During microbial growth in which phase, number of cells produced = number of cells dying and over all cell number does not increase. **(Mark 1)**

**Section II**

**Q 2** How does the ionizing and non ionizing radiation affects the cell viability? Explain briefly? **(Marks 1.5)**

**Q 3** With the help of a suitable example discusses the action of antibiotics on the 50S and 30S ribosomal subunit? Explain diagrammatically. **(Marks 1.5)**

**Q 4** What are various physiological characteristics of archebacteria that make these fit to survive at extreme environmental conditions? **(Marks 2)**

**Q 5** How do the thermophilic microbes protect their cell integrity in the high temperature environment in which they live? Discuss the various adaptation mechanisms. **(Marks 2.5)**

**Q 6** Discuss the various factors that affect the growth of microorganisms. **(Marks 2.5)**

### Section III

**Q 7** What are the organic solvent tolerant microorganisms? Discuss the mechanisms of adaptation on organic solvent tolerant bacteria **(Marks 3.0)**

**Q 8.** Give a detailed account of various antibiotic sensitivity tests used to check the efficacy of the antibiotics against microorganisms **(Marks 3.5)**

**Q 9** How to obtain a pure culture of bacteria from the given soil sample containing a mixture of bacteria fungi and other living microbial genera? Explain diagrammatically. **(Marks 3.5)**