PG Even Semester (CBCS) Exam., May—2017

LIFE SCIENCE AND BIOINFORMATICS

(2nd Semester)

Course No. : LSBCC–201

(Microbiology)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Describe various physical agents of sterilization in terms of their mechanism of action and also their advantages and disadvantages. 14

OR

2. Summarize the advantages of using each major group of characteristics (morphological, physiological, ecological, genetic and molecular) in prokaryotic classification and identification. Give examples of each type of characteristics. 14

3. Write short notes on any *two* of the following : 7×2=14

(a) Anaerobic respiration

(b) Methanogenic bacteria

(c) Sulphate respiration

OR

4. Compare the structural and chemical composition of bacterial cell walls. How is archeal cell wall different? 10+4=14

5. Compare the taxonomy, route of infection and control measures for hepatitis A and C. 14

OR

6. Discuss with illustrations, how bacteriophages help in genetic exchange between microbial cells. Add a note on the evolutionary significance of this process. 10+4=14

7. Discuss the various adaptations seen in Thermophiles and Acidophiles for their survival. List industrial products from thermophiles. 10+4=14

OR

8. Write short notes on the following : 7+7=14

(a) Autotrophs vs. Heterotrophs

(b) Microbial Antibiotics

9. Explain different targets of antibiotics and their mode of action with examples. 14

OR

10. *(a)* With suitable models and reactions, explain the process of microbial degradation of xenobiotic compounds.

(b) What is rhizoremediation? 12+2=14

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