

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BE
BRANCH: BIOTECHNOLOGY

SEMESTER : IV
SESSION : SP/19

SUBJECT: BT4023 MICROBIOLOGY

TIME: 3:00 HOURS

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Define microscopy. [2]
Q.1(b) Give a brief account of the historical perspective of microbiology. [4]
Q.1(c) What is sterilization? Give the different types of sterilization along with the examples. [6]
- Q.2(a) Define batch culture. [2]
Q.2(b) With the help of a neat diagram, provide the fine structure of bacteria with function of different parts. [4]
Q.2(c) Describe the concept of microbial growth & generation time. *E. coli* has a generation time of 20 minutes. [6]
If you start with 1 *E. coli* cell how many do you have after 2 hours?
- Q.3(a) What do you mean by MPN? [2]
Q.3(b) Give vivid account of the microbiology of extreme environment. [4]
Q.3(c) Describe any two allergic disorders caused by the microbes present in the air. [6]
- Q.4(a) Define rhizosphere. [2]
Q.4(b) What are mycotoxins? Give the different types of mycotoxins along with examples. [4]
Q.4(c) Describe the different types of beneficial plant microbe interaction with examples. [6]
- Q.5(a) What do you understand by the term A_w ? [2]
Q.5(b) Describe the microflora in the aquatic environment. [4]
Q.5(c) What is sewage water? Describe the treatment of sewage water. [6]
- Q.6(a) Define bioleaching. [2]
Q.6(b) Discuss the role of microbes in pulp and paper industry. [4]
Q.6(c) What do understand by the term fermentation? With the help of a neat labeled diagram explain a typical fermenter and its parts. [6]
- Q.7(a) What are epidemic diseases? Give examples. [2]
Q.7(b) What do you mean by host pathogen interaction? Define a few interactions. What are the different types of pathogens? [4]
Q.7(c) Describe any two microbial diseases, their cause, methods of treatment and prevention. [6]

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