

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5429

**L**

Unique Paper Code : 2534001205

Name of the Paper : MICROBIAL PRODUCTS IN THERAPEUTICS  
(GE)

Name of the Course : **B.SC. (HONS) MICROBIOLOGY**

Semester : VIII

Duration : 2 Hours

Maximum Marks : 60

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any Five questions.
3. All questions carry equal marks.

Q.1 Write a short note on the following (*any three*):

- i) Primary screening
- ii) continuous fermentation
- iii) Sources of industrially important microorganisms
- iv) Vitamins produced by microorganisms

4x3=12

Q.2 a) Write the producer microorganism and uses of the following:

- i) Erythromycin
- ii) Collagenase
- iii) Lipases

2x3=6

b) What are the advantages of using a CSTR for the industrial production of metabolites by microorganisms? How is a production fermenter different from a lab-scale fermenter? Name the parts of a CSTR involved in maintaining homogeneous mixing and aeration. 6

Q.3 a) What are enzybiotics? Give examples of any two common enzybiotics. Write their advantages over conventional antibiotics. 2+1+3=6

b) What are the advantages of microbial transformation of steroids over chemical methods? Describe the microbial transformation of a steroid by hydroxylation or dehydrogenation reaction. 3+3 =6

*P.T.O.*

Q.4 a) What are probiotic microorganisms? With the help of suitable examples, discuss their features and the benefits these microorganisms offer to human health. 2+4=6

b) Write the main producer microorganism and the use of the following antibiotics (any three)

i) Penicillin G

ii) Cephalosporin

iii) Neomycin

iv) Vancomycin (2x3=6)

Q.5 a) What are the advantages and limitations of solid-state fermentation over submerged fermentation? Write the applications of solid-state fermentation in the production of microbial products. (4+2= 6)

b) What is bacto therapy? Write the applications and limitations of this process. 6

Q.6 a) What is the downstreaming process? List different recovery methods for microbial products? Discuss any two in detail. 6

b) Why is Augmentin more effective than penicillin G in controlling bacterial infections? 3

c) Briefly discuss the use of tissue plasminogen activator or fungal amylases as a therapeutic agent. 3