

5/H-77 (vi) (Syllabus-2015)

2019

(October)

BIOTECHNOLOGY

(Honours)

**(Microbiology and Environmental
Biotechnology)**

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

**Answer Question No. 1 which is compulsory and
any four from the rest**

1. Write briefly on the following : 2×6=12

- (a) Koch's postulates**
- (b) Swan-necked bottle experiment**
- (c) Synchronous growth**
- (d) PPLOs**
- (e) Biopesticides**
- (f) Complex medium**

(2)

2. What is a pure culture? Mention the importance of pure culture. Describe the different techniques used for obtaining a pure culture. $2+3+6=11$
3. Write short notes on any two of the following : $5\frac{1}{2}\times 2=11$
- (a) Induced variation in microbial populations
 - (b) Genetic recombination in microbes by transformation
 - (c) Nutritional classification of micro-organisms
4. Define extremophiles. How do they physiologically adapt to such extreme environments? $2+9=11$
5. Write short notes on the role of microbes on any two of the following : $5\frac{1}{2}\times 2=11$
- (a) Production of biogas
 - (b) Degradation of pesticides
 - (c) Production of microbial hydrogen
6. Define sewage. Why do municipal wastes need to be treated? Write on the prospect, application and impacts of treatment of municipal wastes. $2+3+6=11$

20D/174

(Continued)

(3)

7. Explain in detail the causes and consequences of the following : $5\frac{1}{2}\times 2=11$
- (a) Ozone depletion
 - (b) Eutrophication
8. How is environmental quality bioassessed? Discuss the role of biotechnology in abatement of environmental problems. $3+8=11$

20D-300/174

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