

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

2 0 1 7

(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. Define axenic culture. How can axenic cultures be isolated on solid and liquid media? 2+5+5=12

2. Write short notes on any *two* of the following : 5½×2=11
 - (a) Theory of biogenesis
 - (b) Gram theory of disease
 - (c) Induced variation in microbial populations

3. Compare and contrast between any *two* of the following : 5½×2=11
- (a) Conjugation and transformation
 - (b) Gram-positive and gram-negative bacteria
 - (c) Symbiosis and antibiosis
4. What are psychrophiles and thermophiles? How do they adapt to the respective extreme environment? 4+7=11
5. What are modern fuels? How are they produced by using microorganisms? 2+9=11
6. Write short notes on the role of microbes in any *two* of the following : 5½×2=11
- (a) Agriculture
 - (b) Dairy industry
 - (c) Pesticide degradation
7. Discuss in detail of any *two* of the following : 5½×2=11
- (a) Ozone depletion
 - (b) Eutrophication
 - (c) Sewage treatment
8. Describe the role of environmental biotechnology in management of environmental problem. 11