

**M. Sc. (Environment Science and Technology) Sem - I (CBCS) (2013  
Course) : SUMMER - 2019**

**SUBJECT : ENVIRONMENTAL MICROBIOLOGY**

Day : Monday  
Date : 08/04/2019

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 60

**S-2019-1436**

---

**N. B. :**

- 1) Answer **ANY FIVE** questions.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 

- Q.1** a) Write a commonly used method for isolation of pure culture of bacterium. (06)  
b) Enlist and explain the methods used in direct measurement of microbial growth. (06)
- Q.2** a) Explain molecular methods of microbial classification. (06)  
b) Describe various isolation strategies used to study diversity of microorganism and give their importance. (06)
- Q.3** a) Write a note on working of trickling filters. (06)  
b) Explain the importance of sludge settling in activated sludge process. (06)
- Q.4** a) What are the effects of radiation sterilization on bacterial cell? (06)  
b) Why it is necessary to obtain pure culture? Discuss any one pure culture technique in detail. (06)
- Q.5** a) What are the characteristics of good indicator organism? Discuss in details methods used for detection of coliforms in water. (06)  
b) Elaborate on interaction between various microbial groups during biogas production. (06)
- Q.6** Write short notes (**ANY THREE**) (12)  
a) Steps for purification of water  
b) Biofertilizers  
c) Microbial indicators of air pollution  
d) Biobleaching  
e) Vermicomposting

\* \* \* \* \*