

U.G. 5th Semester Examination - 2021**BOTANY**Course Code : **BBOTDSHC1 [DSE1]**Course Title : **Industrial and Environmental Microbiology**

Full Marks : 30

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **ten** of the following questions:

1×10=10

- a) What are the differences between batch fermentation continuous fermentation?
- b) What is DO? Where this term is used?
- c) What is growth rate and maximum specific growth rate?
- d) During fermentation why generation of foam takes place?
- e) Name two disease causing air borne microbes.
- f) What do you mean by MPN?
- g) Name two disease causing bacteria in water.

h) From a classroom how do you trap virus and how do you ensure that the trapped microbes is COVID 19- mention the requirement for it.

i) How do you isolate yeast or filamentous fungi present in the soil how to screen its phosphate solubilization properties.

j) How to screen cellulolytic microbes from soil?

k) What do you mean by potability of water?

l) How do you separate after fermentation the live organism and broth?

m) In which type of crops you choose to apply slow growth *Rhizobium* and fast growth *Rhizobium*?

n) Why Penicillin acylase is applied?

o) What is COD?

2. Answer any **five** of the following: 2×5=10

a) Give four uses of enzymes in detergent industry and microbes where from it is obtained?

b) How do you screen Amylosee hydrolytic bacteria and fungi separately?

- c) Give four uses of each microbes and enzymes in pharmaceutical industries.
 - d) Mention the functions of A M Fungi.
 - e) Mention four ways of immobilization of enzymes.
 - f) During fermentation why generation of foam takes place?
 - g) Mention two advantages and disadvantages of submerged fermentation and solid-state fermentation.
 - h) What is the function of Impellers and Baffles in the components of a bioreactor?
3. Answer any **two** of the following: $5 \times 2 = 10$
- a) Describe with diagram a general structure of a continuous stirred tank type bio-reactor. 5
 - b) Write down the methods of Screening, fermentation and downstream processing of Lipase. 5
 - c) Describe the role of microbes in sewage and domestic waste water treatment system. 5
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