

**2020**

**BOTANY — HONOURS**

**Paper : SEC-A-1**

**(Applied Phycology, Mycology and Microbiology)**

**Full Marks : 80**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

1. Answer the following questions : 2×10
- (a) What is Carrageenan? Name one application of it.
  - (b) What is agar-agar? Name one agar producing algae.
  - (c) Name one aromatic amino acid and mention its fungal source.
  - (d) Name one bacterium and one virion used as biopesticide.
  - (e) What is SCP? Name a freshwater algae used as SCP.
  - (f) Name two fungal sources of the enzyme cellulose.
  - (g) Write the microbial source and uses of protease.
  - (h) Name two soil microbes used in mineral processing.
  - (i) What is 'broth culture'?
  - (j) What is continuous fermentation?
2. Answer **any four** questions of the following :
- (a) With the help of a flow chart outline the industrial production of vinegar. 5
  - (b) Discuss the importance of marine algae in food industry. 5
  - (c) Give a brief outline of production of Roquefort cheese. 5
  - (d) Briefly discuss the application of algae in production of single cell protein (SCP). 5
  - (e) Discuss the biological application of biopesticide produced by bacteria in controlling insects. 5
  - (f) Discuss the role of soil microbes in mineralization. 5
3. Answer **any four** questions of the following :
- (a) (i) Write the bacterial sources and uses of the following :  
Amylase, Glutamic acid.
  - (ii) Discuss the micro-industrial production of streptomycin. (2+2)+6

**Please Turn Over**

- (b) Name the source organisms and uses of :  
Griseofulvin, Riboflavin, Cyclosporin-A, Tryptophan. 2½×4
- (c) Define biofertilizer. Mention the different sources of biofertilizer. Explain the production and application of biofertilizers for leguminous plants. 2+2+6
- (d) (i) What is diatomite and how it is obtained? Discuss the industrial application of diatomite.  
(ii) Add a short note on toxins produced by cyanophycean algae. (2+4)+4
- (e) What is aflatoxin? Mention two potential sources of it. Classify it and mention the physico-chemical properties of it. Point out its health consequences on human. 2+2+(1+2)+3
- (f) (i) Write a short note on use of microbes as biopesticide.  
(ii) Write the bacterial sources and uses of the following :  
Dextran and Lysine. 5+(2½+2½)
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