

2020

BIOCHEMISTRY — GENERAL

Paper : DSE-A-2

(Basic Microbiology)

Full Marks : 50

The figures in the margin indicate full marks.

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

Day 2

1. Answer **any five** questions : 2×5
- (a) What is meant by fermentation?
 - (b) Describe the contribution of Louis Pasteur in Microbiology.
 - (c) What is the difference between prokaryotic and Eukaryotic microorganism?
 - (d) Define a virus and explain why it is defined that way.
 - (e) What is pasteurization?
 - (f) What are psychrophilic bacteria?
 - (g) Distinguish between phototrophs and chemotrophs.
 - (h) Name the causative agent of tuberculosis.
2. Answer **any two** questions :
- (a) (i) Describe Whittaker five kingdom concept with a schematic representation.
 - (ii) How bacteria is classified depending on its shape and arrangement? 3+2
 - (b) (i) What is turbidimetric measurement? What is its disadvantage?
 - (ii) Mention four differences between Archae-bacteria and Eubacteria. (2+1)+2
 - (c) (i) Name four foods that are produced by microbial fermentation. Describe the role of microorganism in each case.
 - (ii) Describe the various ways in which microorganisms are involved with petroleum industry. (1+2)+2
 - (d) (i) Define the following term : lysogeny, lysis, temperate and virulent.
 - (ii) What are the general characteristics of algae? 3+2

Please Turn Over

3. Answer **any three** questions :

- (a) (i) Describe the morphology of amoeba.
(ii) Describe the different ways by which fungi reproduce asexually.
(iii) How lactic acid and alcohol is produced in industry with the help of microorganism? 3+3+(2+2)
- (b) (i) How do you account for spontaneous generation vs. biogenesis?
(ii) Describe Koch's postulates for germ theory of disease.
(iii) Describe briefly how sexual reproduction is carried out in fungi. 3+3+4
- (c) (i) What are the characteristics of fungi?
(ii) What are the different pigments present in algae? Mention the biological importance of algae.
(iii) Describe how fungi are involved in biodeterioration specially in Paper and Textile industry. 3+(1+2)+(2+2)
- (d) (i) What is a viriod? Describe the different cellular component of virus.
(ii) What are the different steps of virus infection and replication?
(iii) How microorganisms synthesis amino acid and vinegar? (1+2)+3+(2+2)
- (e) (i) Describe the structure of a bacteria.
(ii) How penicillin is produced in industry with the help of microorganism?
(iii) Describe the replication process of algae. 3+3+4
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