

2021

MICROBIOLOGY — GENERAL

Paper : GE/CC-1

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.

Answer **question no. 1** and **any three** questions from the rest.

1. Answer **any ten** questions :

2×10

- (a) Who first described 'animalcules'?
- (b) What are Viroids?
- (c) Define the term mutualism.
- (d) What is submerged fermentation?
- (e) What is Protista?
- (f) What do you mean by resolution of a microscope?
- (g) What sort of substances are sterilized by filtration?
- (h) Name two organisms that are responsible for the spoilage of meat.
- (i) What is the advantage of using electron beams instead of light in microscope?
- (j) Define syntrophy.
- (k) What is Thermal Death Time (TDT)?
 - (l) Who introduced the term "magic bullet" and what was it used for?
- (m) What do you understand by 'first line of defence'?
- (n) What are secondary metabolites? Give one example.
- (o) Name two microbes that form the normal microflora of human skin.

2. (a) Describe the utility of Carl Woese's three domain classification system.

(b) What are probiotics?

(c) Name one human pathogen along with its portal of entry and disease symptoms.

(d) State major contributions of Sergei Winogradsky and Elie Metchnikoff. 2+2+(1+1+1)+(1½+1½)

Please Turn Over

3. (a) Mention similarities and differences between archaea and eukaryotes.
(b) What is food borne infection? Give an example.
(c) What is fungal cell wall made up of? Write its chemical composition.
(d) Name one dairy based fermented food along with its fermenting microflora. (2+2)+2+2+2
4. (a) What is passive immunity? Mention different types of passive immunity.
(b) Write the biological properties of IgM.
(c) What are antigens? State two essential properties of an antigen. (1+2)+3+(2+2)
5. (a) What is biofertilizer? Give example of microorganisms that are used as biofertilisers.
(b) Discuss briefly different parts of an ideal fermenter with a diagram.
(c) Write a short note on bioremediation. (1+2)+(3+1)+3
6. Differentiate between : 2½×4
(a) Resolving power and Magnification of microscope.
(b) Mutualism and Synergism.
(c) Sterilization and Disinfection.
(d) Probiotics and Prebiotics.
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