## 2021

## MICROBIOLOGY — HONOURS

Paper: 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.

Question no. 1 is compulsory. Answer any three questions from the rest.

## 1. Answer any ten questions:

 $2\times10$ 

- (a) Why deuteromycetes are called 'fungi imperfecti'?
- (b) Who discovered the first antibiotic? Name the antibiotic and its source.
- (c) What is meant by 'magic bullet'?
- (d) State the 'one gene one enzyme' hypothesis.
- (e) What contribution did Edward Jenner make in the field of Microbiology?
- (f) Mention any two scopes of Microbiology.
- (g) Differentiate between prokaryotic and eukaryotic ribosomes.
- (h) Name two fungi that are agriculturally important.
- (i) What are the different types of flagella found in algae?
- (i) Name the algal source of agar-agar.
- (k) Why red tide is caused and why are they harmful?
- (1) Differentiate between virus and viroid.
- (m) Why anemia is caused in malaria?
- (n) State the contribution of S. Winogradsky.
- (o) What is heterokaryosis? Give example.
- 2. (a) 'Leeuwenhoek's observations were the critical step in the development of Microbiology'— Explain.
  - (b) State any two limitations of Koch's postulates.
  - (c) How did Pasteur disprove the Theory of Spontaneous Generation?
  - (d) What important contribution did Joseph Lister make in preventing infections?
  - (e) Why is agar used as solidifying agent in Microbiology labs?

 $2+2+3+1\frac{1}{2}+1\frac{1}{2}$ 

3. (a) What is known as the 'three-domain system'? What was its basis? Who introduced this classification?

(2)

- (b) What is meant by LUCA in Microbiology?
- (c) What are the drawbacks of Whittaker's five kingdom classification system?
- (d) How did the term protists arise?

(2+2+1)+1+3+1

- 4. (a) What is meant by 'Alternation of Generations'?
  - (b) Schematically represent Diplobiontic life cycle of algae.
  - (c) Name one algal strain used for biofuel production.
  - (d) Name different pigment and food reserve found in different groups of algae.

2+3+1+(2+2)

- 5. (a) How haustoria help fungus in parasitism?
  - (b) What is the importance of mycorrhiza?
  - (c) Briefly explain parasexual cycle in fungi. Give one example of fungi showing parasexual cycle.
  - (d) What are aflatoxins? Name one producer organism.

2+2+(3+1)+(1+1)

- 6. (a) Name the causative agent and state the symptoms of giardiasis.
  - (b) State the importance of pseudopodia and food vacuole in Amoeba proteus.
  - (c) What is referred to as 'slipper animalcule'?
  - (d) What is leishmaniasis? How is it diagnosed?

(1+2)+3+1+(1+2)