

2021

MICROBIOLOGY — HONOURS

Sixth Paper

(Group-A)

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 two** questions from the rest.

1. Answer **any five** questions: 4×5
- (a) Name one DNA and one RNA virus.
 - (b) What are prions? How are they transmitted?
 - (c) Why is Oral Poliovirus Vaccine (OPV) preferred over Inactivated Poliovirus Vaccine (IPV)?
 - (d) How will you differentiate between a bacterial endotoxin and exotoxin?
 - (e) Name one antiviral agent. How does it work?
 - (f) Which organism causes lockjaw condition?
 - (g) Define commensalism with an example.
 - (h) What is the role of reverse transcriptase in viral infection?
2. (a) What is the causative agent of dental caries? Briefly describe the mechanism of forming dental plaque by plaque forming organisms.
- (b) State the mechanism of action of Shigatoxin.
- (c) Mention the mechanism of an antibiotic which inhibits nucleic acid synthesis. (3+4)+4+4
3. (a) What is a virus? Briefly describe different sizes and shapes of different viruses.
- (b) Toxoids can be prepared from the exotoxins but not from endotoxins— Explain.
- (c) What are the different approaches of gene therapy?
- (d) What is lecithinase? Which microorganism secretes this? 5+3+3+(2+2)
4. (a) Why is it not possible to develop a single flu vaccine?
- (b) Mention three strategies by which the microorganisms might develop resistance to the antibiotics.
- (c) Name the pathogen, portal of entry, disease symptoms and preventive measure of the following:
- (i) Typhoid
 - (ii) Gonorrhea. 3+4+(4+4)

Please Turn Over

- 5.** (a) Describe structure and function of cholera toxin.
(b) Name the pathogen, disease symptoms and transmission of polio.
(c) What is the role of normal microflora in human body?
(d) Name the drug regime used to treat tuberculosis.
(e) What is a macrolide antibiotic used for?

4+4+3+2+2

- 6.** Write short notes on *any three*:

5×3

- (a) Candidiasis
(b) SV40 virus
(c) Amoebiasis
(d) Mechanisms of bacterial drug resistance
(e) Tetanus.
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