

2020

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 is latent infection?
  - (c) What is subclinical infection?
  - (d) Name one antiprotozoal agent. How does it work?
  - (e) What is the role of reverse transcriptase in viral infection?
  - (f) What is lockjaw condition? Which organism causes this?
  - (g) Name the factors that might change the normal microflora in human body.
  - (h) Define commensalism with an example.
2. (a) Why polio vaccine is administered in oral drops and not in injection?  
(b) Compare the replication strategies of DNA and RNA viruses.  
(c) T4 genome is terminally redundant and circularly permuted.— Explain.  
(d) Why it is not possible to develop a single flu vaccine? 3+5+3+4
3. (a) What is the causative agent of dental caries? Briefly describe the mechanism of forming dental caries by plaque forming microorganisms.  
(b) What is Lecithinase? Which microorganism secret this? How lecithinase facilitate the invasion of tissue? (3+4)+(2+2+4)
4. (a) State the mechanism of action of Shiga toxin.  
(b) Mention the mechanism of an antibiotic which inhibits the nucleic acid synthesis. Name the antibiotic.  
(c) Mention three strategies by which the microorganisms may develop resistance to the antibiotics. 4+(4+2)+5

**Please Turn Over**

5. (a) How would different adherent factors lead to different diseases?  
(b) Name the pathogen, portal of entry, disease symptom and preventive measure of the following :  
(i) Typhoid (ii) Gonorrhoea.  
(c) How is multidrug resistant TB treated? 4+(4+4)+3
6. (a) Classify the viruses on the basis of nucleic acid content.— Give example of each class.  
(b) What do you mean by superinfection immunity?  
(c) How does UV light induce the synthesis of virions from lysogenic bacteria?  
(d) Why do antiviral drugs generally exhibit host toxicity? 5+4+4+2
7. Write short notes on the following (*any three*) : 5×3  
(a) Cholera toxin  
(b) SV 40 virus  
(c) Inhibitors of protein synthesis  
(d) Candidiasis.
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