

2021

MICROBIOLOGY — HONOURS

**Paper : CC-14
(Medical 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.*

Answer **Question No. 1** (compulsory) and **any three** from the rest.

1. Answer **any ten** questions:

2×10

- (a) Which component of the pathogen is most associated with the induction of septic shock? Name an organism responsible for septic shock.
- (b) How do viruses evade the immune response in a host organism?
- (c) Name two microorganisms causing skin and wound infection.
- (d) What are Nosocomial infections? Name one causative agent.
- (e) Name the important structures related to microbial attachment to cells.
- (f) What is the characteristic of *Staphylococcus aureus* enterotoxin?
- (g) What is Ghon focus?
- (h) Name any one disease caused by the following:
 - (i) Single stranded RNA virus
 - (ii) Double stranded DNA virus
- (i) What do you understand by indigenous microflora? Name an acid tolerant GI tract associated bacteria.
- (j) What are probiotics?
- (k) Mention the role of 'Amantadine' as antiviral drug.
 - (l) Why are β -lactam antibiotics so named?
- (m) What is MRSA?
- (n) Name a protozoan disease stating the causal organism.
- (o) State the role of LPS in promoting infection.

Please Turn Over

2. (a) Distinguish between:
- (i) ID_{50} and LD_{50}
 - (ii) Exotoxin and Endotoxin
 - (iii) Pathogen and Pathogenicity
 - (iv) Invasiveness and Virulence
- (b) How does Salmonella infect the host?
- (c) 'Antibiotics are generally effective against bacterial infection and ineffective against viral infection'— justify.
- (d) What are opportunistic pathogens? 4+2+2+2
3. (a) How will you distinguish between collection and culturing of clinical specimens?
- (b) Define ELISA. What is the basic principle of ELISA technique?
- (c) What are the four main types of ELISA techniques? 2+(2+2)+4
4. (a) Briefly write on the normal microbial flora of human and its significance.
- (b) Write briefly about the resistance mechanism of microorganisms against any two antibiotics.
- (c) Aminoglycosides are a very active group of antibacterial agents. Write on their mode of action. They are effective against which group of microorganisms? 4+(2+2)+2
5. Write the name of the causative agent, symptom and treatment for the following diseases: 2×5
- (a) Kala-azar
 - (b) Ebola
 - (c) Herpes
 - (d) Tuberculosis
 - (e) Candidiasis
6. (a) What is cytopathic effect? Why is it difficult to prepare vaccine against HIV?
- (b) Compare the following:
- (i) Hepatitis virus A and Hepatitis virus B
 - (ii) Rhinoviruses and Corona viruses
 - (iii) Diarrhea and Dysentery (2+2)+(2×3)
7. (a) Give the reasons for the following:
Occurrence of *Streptococcus mutans* on tooth surface
- (b) Write short note on acyclovir and histoplasmosis.
- (c) How is a respiratory disease transmitted from an infected person? What measures can be taken to prevent the transmission of this disease? 2+(2½+2½)+(1½+1½)
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