MICROBIOLOGY

PAPER-I

Time: 3 hours

MICRO/J/19/18/I

Max. Marks:100

Important Instructions:

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

1.	Define human microbiome. Write in short about its composition and role in Microbiology.	2+3+5
2.	Define virulence and pathogenicity. Briefly write about the methods of determining virulence of a microorganism.	(2+2)+6
3.	Define antiseptics and disinfectants. Enumerate the sterilizing disinfectants used in hospital practice. Enumerate the factors that affect efficacy of disinfection.	(1+1)+3+5
4.	Define catheter related blood stream infections (CRBSI) and central line associated blood stream infections (CLABSI). Write in short about the laboratory diagnosis of CRBSI.	(2+2)+6
5.	What is viable but non-culturable (VNC) state of bacteria? Mention in short the significance of VNC state of bacteria in epidemiology and management of bacterial infections.	2+4+4
6.	Enumerate the mechanisms of genetic variation in bacteria. Write a short note on mobile genetic elements and their role in antimicrobial resistance.	3+3+4
7.	Define pathogen associated molecular patterns (PAMPs) and toll-like receptors (TLRs). Write a short outline of their role in immunity.	2+2+6
8.	Draw a labelled diagram of the structure of secretory immunoglobulin A (IgA) and write about its role in mucosal immunity.	5+5
9.	What is major histocompatibility complex (MHC)? What is its role in antigen recognition and presentation?	4+6
10.	Define cytokines and chemokines. Discuss the pathogenesis of immune reconstitution inflammatory syndrome (IRIS).	2+2+6

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