MICROBIOLOGY

PAPER – IV

MICRO/D/14/18/IV

Time : 3 hours
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.*

1. Define significant bacteriuria. Enumerate the microbial agents causing urinary tract infections (UTI). Briefly describe approach to laboratory diagnosis of UTI. 2+4+4

2. What do you mean by pre-exposure prophylaxis? How does it differ from post exposure prophylaxis? 4+6

3. Discuss the guidelines for Biomedical waste management in India. 10

4. Describe next gen sequencing. Describe briefly the applications of next gen sequencing in Microbiology. 4+6

5. Describe the role of various expert systems being used in clinical microbiology. 10

6. Describe briefly various components of antimicrobial Stewardship programs. Describe in brief implementation of such program in a hospital. 5+5

7. Describe recent advances in the field of malaria vaccines. 10

8. Describe briefly quality control as applicable to nucleic acid testing technologies. 10

9. Define biofilms. Describe briefly their role in antibiotic resistance in bacteria. Write briefly about biofilm detection in laboratory. 3+4+3

10. What are Extended Spectrum Beta lactamases (ESBL)? Describe in short recent advances of detection of ESBL in bacteria. 3+7

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