

Total number of printed pages—4

53 (FPT 301) BMCB

2014

BASIC MICROBIOLOGY

Paper : FPT 301

Full Marks : 100

Pass Marks : 30

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five (5) questions from seven.

1. (a) Define Micro-organism. Explain in brief the contribution of John Needham and Robert Koch in the development of microbiology. 1+4
- (b) Why are cultured media sterilized before use? 3
- (c) What is Resolving Power? Explain the function of Diaphragm and Condenser in microscope. 2+4

Contd.

- (d) What is Negative staining ? Why do the bacteria remain unstained in the negative staining procedure ? What is an advantage of negative staining ? 1+3+2
2. (a) Define the following terms : 2×4
- (i) Colony
 - (ii) Phage
 - (iii) Wet mount
 - (iv) Peptidoglycan.
- (b) What is Bacteriophage ? Explain the lytic and lysogenic cycle of bacteriophage. 2+4+4
- (c) Explain giving reason why synchronous growth should take place in microbial growth. 2
3. (a) Differentiate between : 3×3
- (i) Bright field and Dark field microscope
 - (ii) Synthetic and Non-synthetic medium
 - (iii) Prokaryote and Eukaryote.
- (b) Define Enriched medium. What are the different compositions of culture media ? 2+2

- (c) Explain in brief the characteristics of Gram +ve bacteria. 4
- (d) Why Cyanobacteria is known as blue green algae? 3
4. (a) What is the purpose of simple staining? Why are basic dyes more successful in staining bacteria than acidic dyes? 2+2
- (b) Explain in brief the characteristics of Archaeobacteria. 4
- (c) What is Generation time? Explain the standard bacterial growth curve. 2+5
- (d) How will you classify bacteria according to their form? 5
5. (a) What are Antimicrobial resistance? What are the different reasons that cause antibiotic resistance in bacteria? 2+5
- (b) What is microbial nutrition? Write the different elemental forms of nutrients that is required by micro-organism. 2+6

- (c) "All micro-organisms cannot be grown in a given particular culture medium". Explain. 3
- (d) What are the *three* main types (in terms of their physical forms) of microbiological culture media? 2
6. (a) Explain colony morphology. 5
- (b) What is disinfection? Give suitable example in support of your answer. 4
- (c) Explain with diagram the sites of action of different antimicrobial drugs. 6
- (d) What is pure culture? Explain in brief how will you isolate the pure culture. 1+4
7. (a) Write short notes on : 4×4
- (i) Industrial uses of Bacteria
 - (ii) Slant Method
 - (iii) Sterilization
 - (iv) Gram -ve Bacteria.
- (b) What are Antifungal drugs? Give examples. 4
-