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Your Roll No.

25

1025

B.Sc. (Hons.)/I

C

MICROBIOLOGY—Paper I

(History and Scope of Microbiology and Microbial World)

(Admissions of 2004 and onwards)

Time : 3 Hours

Maximum Marks : 60

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *five* questions in all, selecting *two*

from Section A and *three* from Section B.

All questions carry equal marks.

Section A

1. Name the scientist associated with the following discovery/work

(Attempt any *twelve*) :

12×1=12

(i) Restriction and modification of DNA

P.T.O.

- (ii) Polymerase chain reaction
- (iii) Law of Independent Assortment
- (iv) Rabies vaccine
- (v) Whole Genome Shot Gun technique
- (vi) Telescope
- (vii) Photoelectric effect
- (viii) Lysozyme
- (ix) Wobble hypothesis
- (x) Strange Nesting behavior of Cuckoo's
- (xi) Use of antiseptic in surgery
- (xii) Streptomycin
- (xiii) Transposons.

2. Write the important contributions of any *three* of the following scientists :

3×4=12

- (i) John Dalton

- (ii) Karl Landsteiner
- (iii) Paul Ehrlich
- (iv) Anton von Leeuwenhoek
3. (a) How was the theory of spontaneous generation disproved ? 4
- (b) Who authored the following work/book (attempt any *three*) : $1 \times 3 = 3$
- (i) An enquiry into the causes and effects of the Variole vaccine
- (ii) Elements
- (iii) Conquest of tuberculosis
- (iv) Molecular biology of the Gene.
- (c) How were pure cultures first obtained and what is its significance ? 3
- (d) Which period is known as the Golden Age of Microbiology and Why ? 2

Section B

4. (a) Discuss the *five* kingdom classification of living beings. 4
- (b) Define any *eight* of the following : 8×1=8
- (i) Antigen
 - (ii) Actinorrhiza
 - (iii) Sauerkraut
 - (iv) Biomagnification
 - (v) Adjuvants
 - (vi) SCP
 - (vii) Heterocyst
 - (viii) Viroid
 - (ix) Composting.
5. Draw well labelled diagrams of any *four* : 4×3=12.
- (i) T4 phage

- (ii) *Chlamydomonas*
- (iii) *Aspergillus*
- (iv) *Paramecium*
- (v) *Volvox* (daughter colonies).

6. Write short notes on any four : 4×3=12

- (i) Nutrition in Protozoa
- (ii) S cycle
- (iii) Parasitism
- (iv) Landfills
- (v) Mycorrhiza

7. (a) Give an example of each of the following (attempt any six) : 6×1=6

- (i) A yeast
- (ii) A filamentous alga

- (iii) A DNA virus
- (iv) A ciliated protozoan
- (v) A Gram positive coccus
- (vi) A virus with icosahedral symmetry
- (vii) A bioluminescent microbe

(b) Differentiate between any *three* of the following pairs :

- (i) Commensalism & Competition
- (ii) Wine & Whisky
- (iii) Bioremediation & Bioleaching
- (iv) Sporangiospore & Conidia.

3×2=6