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5855

Your Roll No

B.Sc. (Hons.)/I

J

MICROBIOLOGY – Paper I

(History and Scope of Microbiology and Microbial World)

(Admissions of 2004 & 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.*

Attempt Section A and B on separate answer books

All questions carry equal marks

SECTION A

(History of Science and Microbiology)

1 Write the scientific contributions of any **four** of the following scientists –

(a) Paul Ehrlich

(b) Galileo Galilei

(c) Karl Landsteiner

(d) James Dewey Watson

(e) Sergei N Winogradsky

(3×4=12)

P T O

2 Name the scientist associated with the following work/discovery –

- (i) Law of multiple proportions
- (ii) Plasmid as a cloning vector
- (iii) Special theory of relativity
- (iv) Elements
- (v) Dispersion of light
- (vi) Wobble hypothesis
- (vii) Gene for cystic fibrosis
- (viii) Azurin as an anti-cancer drug
- (ix) Lysozyme
- (x) Anthrax vaccine
- (xi) Growth of bacteria on a solid medium
- (xii) Restriction endonucleases (1×12=12)

3 (a) Write an account of Robert's Koch work on the Germ Theory of disease (4)

(b) Write the work/discovery for which the following scientists were awarded the Nobel Prize (attempt any four)

- (i) C V Raman
- (ii) Selman Waksman
- (iii) Elie Metchnikoff
- (iv) Kary B Mullis
- (v) Albert Einstein (1×4=4)

(c) Who coined the following terms ?

(i) Virus

(ii) Little animalcules

(iii) Vaccination

(iv) Vaccine

(1×4=4)

SECTION B
(Microbiology)

4 (a) State the differences between eubacteria, archaeobacteria and eukaryotes. Who gave this concept and what is its significance? (4)

(b) What do you understand by an immunoglobulin? Discuss its types present and roles played in the human body (4)

(c) Classify any 2 of the following and give their two most important salient features –

(i) *Chlamydomonas*

(ii) *Ectocarpus*

(iii) *Plasmodium*

(2×2=4)

5 Define the following (any 12) –

PGPR, biochips, artificial sweetener, yogurt, antibiotic, bioreactor, amensalism, septic tank, protein engineering, prion, biotechnology, composting, BOD

(1×12=12)

P.T.O

6 (a) Draw well labelled diagrams of **any 3** of the following –

(i) TMV

(ii) *Rhizopus*

(iii) Hepatitis B Virus

(iv) *Euglena* (2×3=6)

(b) Explain 'fermented foods' Discuss with the help of any two suitable examples (1+2=3)

(c) Outline the basic components and steps of recombinant DNA technology How is it beneficial to mankind ? (3)

7 (a) Explain the following –

(i) Biomagnification

(ii) Mutualism

(iii) Viral Symmetry

(iv) Nutrition in Protozoa (2×4=8)

(b) Give an example of the following –

(i) Anaerobic fungus

(ii) Source of agar agar

(iii) Filamentous bacteria

(iv) Nitrogen fixer (1×4=4)

(400)****