2017

M.Sc.

1st Semester Examination

MICROBIOLOGY

PAPER—MCB-103

Subject Code—31

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Use separate Answer-scripts for Group-A & Group-B

Group—A

[20 Marks]

Answer any *two* questions.

1. (a) State the biological importance of Van-der walls force and hydrolic interaction.

(b) Justify the statment—"Water in an unique solvent for polar molecules."

(c) State briefly Handerson-Hesse batch equation and mention its significance.

2. (a) Write a applications of factor techinques in biology.

(b) What is entropy and free energy ?

(c) Write is brief about the fluid mosaic model of plasma membrane. 4+3+3

3. Write short notes on the following (any *four*) : $4\times2\frac{1}{2}$

(a) GM counter ;

(b) Isoelectric point ;

(c) Liposome

(d) Half life of isotope ;

(e) 1st law of thermodynamics ;

(f) Dounan-membrane equlibrium.

Group—B

[20 Marks]

Answer any *two* questions.

1. (a) State the principle and applications of phase contrast microscopy. 2+2

(b) Write the limitations of electron microscopy. 2

(c) Difference between NMR asnd ESR. 2

(d) What is the significance of using SDS in PAGE analysis of protein ? 2

2. (a) Write in brief about different types of column sed in HPLC. 3

(b) State the working principle of ion exchange chromatography with diagram. 3

(c) Schematically describe the Sangen method DNA sequencing. 3

(d) Write the name of two directors used in HPLC. 1

3. Write short notes (any *four*) : $4 \times 2\frac{1}{2}$

(a) Edman degradation in protein sequencing.

(b) Application of GC-MS ;

(c) Isoelectric focusing ;

(d) US-VIS spectrophomometer ;

(e) Resolving power of microscope ;

(f) Application of CD.
