This question paper contains **2** printed pages]

NY—157—2023

FACULTY OF SCIENCE

M.Sc. (Third Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(CBCS/New Pattern)

MICROBIOLOGY

Paper-III-MB–303

(Microbial Diversity and Extremophiles)

(Saturday, 9-12-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Attempt *all* questions.

(*ii*) *All* questions carry equal marks.

(*iii*) Draw neat labelled diagrams wherever necessary.

1. Describe evolutionary tree of eukarya on the basis of 16S rRNA sequencing. 15

Or

Write on :

(*a*) Compost as thermophilic habitat. 8

(*b*) Classification of thermophiles. 7

P.T.O.

2. Take a detailed account of acidophilly in prokaryotes. 15

Or

Write on :

(*a*) Classification of acidophiles 8

(*b*) Applications of alkaliphiles. 7

3. Describe various conditions required for microbial life at low temperature. 15

Or

Write on :

(*a*) Cyanobacteria in cold ecosystem 8

(*b*) Ice binding protein. 7

4. Take a detailed account on life at high pressure. 15

Or

Write on :

(*a*) Osmoadaptation 8

(*b*) Death under pressure. 7

5. Solve any *three* : 15

(*a*) Hyperthermophiles

(*b*) Cell membrane of alkaliphiles

(*c*) Acidotolerance

(*d*) Methanogens

(*e*) Wallless bacteria.