

2022

B.F.Sc. 1st Semester Examination

Fundamentals of Microbiology

PAPER — BFSC-104

Full Marks : 50

Time : 2 hours



The figures in the right-hand margin indicate marks.

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

Illustrate the answers wherever necessary.

1. Answer any **ten** from the following questions :
2×10=20

(a) What is bacterial flagella?

(b) Differentiate between bacteria and cyanobacteria.

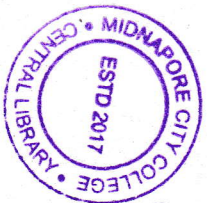
(c) What is Archaeobacteria?

(d) Define frameshift mutation.

(e) What is bacterial transformation?

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(Turn Over)



(2)

- (j) What is nitrification? Name any one nitrifying bacteria.
- (k) Mention the names of two microbial media.
- (l) What is facultative anaerobe? Give an example.
- (m) What is sewage?
- (n) Define virion.
- (o) What is differential staining?
- (p) How do psychrophiles differ from thermophiles?
- (q) Mention the role of phosphorus in biological system.
- (r) Differentiate between metabolism and mineralization.
- (s) What is the main difference between homolactic and heterolactic fermentations?

2. Answer any six from the following questions :

5×6=30

- (a) Draw and describe different phases of bacterial growth curve. 5
- (b) What is bacterial capsule? State its composition and roles. 2+1½+1½=5
- (c) What is conjugation? What is Hfr bacteria? State its significance. 2+1½+1½=5

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(Continued)

(3)

- (d) What is agar? Mention its use. Define selective and differential media with example. 1+1+1½+1½=5
- (e) Write the role of microorganisms in carbon cycle. What is nitrogen fixation? 3+2=5
- (f) What is sterilization? Write the mode of action of moist heat and UV ray mediated sterilization. 2+1½+1½=5
- (g) What is fermentation? Write its significance. Write two industrial applications of fermentation process. 2+1½+1½=5
- (h) Write the economic significance of aquatic microorganisms. 5
- (i) Differentiate bacteria on the basis of flagellar position with diagrams. 5
- (j) Write short notes on microbial biofilms and bacterial photosynthesis. 2½+2½=5

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