

E-6833

M.Sc. (IIIrd Semester) Examination, 2021

MICROBIOLOGY

(Environmental Microbiology)

Time Allowed : Three Hours

Maximum Marks : 70

Mimimum Pass Marks : 28

SECTION - A

(Objective Type Questions)

Note : Attempt any ten questions. Each question carries

one mark.

1×10=10

Q. 1. Fill in the blanks :

(i) Example of airborne pathogen is _____.

(ii) Example of waterborne pathogen is _____.

(iii) _____ is a bioindicator for air quality assessments.

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P.T.O.

(2)

(iv) SARS - CoV - 2 is a _____.

(v) _____ converts milk into curd.

Multiple Choice Type Questions :

(vi) Which of the following is an example of denitrifying bacteria ?

(a) Nitrosomonas

(b) Nitrobacter

(c) Pseudomonas

(d) All of the above

(vii) Among the following, which microorganism is involved in nitrogen fixation with wood trees ?

(a) Frankia

(b) Rhizobium

(c) Azospirillum

(d) Azobacter

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(3)

(viii) Microorganisms that can be used to present

oil-spills are :

- (a) Alcanivorax borkumensis
- (b) Methylocella silvestries
- (c) Both (a) and (b)
- (d) None of the above

(ix) Economically important fungi is :

- (a) Yeast
- (b) Fusarium venenatum
- (c) Penecillium camemberti
- (d) All of the above

(x) Soy fermentation is caused by :

- (a) Aspergillus oryzae
- (b) Monascus purpureus
- (c) Both (a) and (b)
- (d) None of the above

(4)

(xi) Example of beneficial bacteria is :

- (a) Lactobacillus
- (b) Bifidobacteria
- (c) Streptococcus thermophilus
- (d) All of the above

(xii) Examples of pathogen is :

- (a) Bacteria
- (b) Protozoa
- (c) Fungi
- (d) All of the above

SECTION - B

(Very Short Answer Type Questions) (25-30 words)

Note : Attempt any five questions. Each question carries

2 marks.

5×2=10

(5)

- Q. 2.** (i) What do you mean by commensalism ?
- (ii) Name two edible fungi.
- (iii) Write names of two GM crops.
- (iv) Write a note on bioaugmentation.
- (v) Write a note on bioleaching.
- (vi) What is a bioindicator ?
- (vii) What is biological oxidation ?
- (viii) What are xenobiotics ?

SECTION - C

(Short Answer Type Questions) (250 words)

Note : Attempt any five questions. Each question carries

4 marks.

5×4=20

- Q. 3.** (i) Write a short note on Nitrogen Fixation.

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(6)

- (ii) Write a short note on Mutualism.
- (iii) Write a short note on Sewage treatment.
- (iv) Write a short note on Bioaccumulation.
- (v) What are water-borne micro-organisms ? Give examples.
- (vi) Write a note on Biofilm.
- (vii) Write a note on Bioadsorbent.
- (viii) Write a note on beneficial fungi with examples.

SECTION - D

(Essay Type Questions) (More than 500 words)

Note : Attempt any three questions. Each question carries

10 marks.

3×10=30

- Q. 4.** (i) Write a detail note on Microbial Diversity in Soil.
- (ii) Write a detail note on solid waste treatment.
- (iii) Write a note on pollutants and associated risks.

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(7)

- (iv) Write a detail note on microbial degradation of xenobiotics.
- (v) With a schematic diagram, explain nitrogen cycle.
- (vi) Write a detail note on primary, secondary and tertiary sewage treatment methods.
