



GAE-413

Seat No. _____

B. Sc. (Sem. III) Examination

November/December - 2015

MB-202 : Microbiology

(Soil & Water Microbiology)

Time : 3 Hours]

[Total Marks : 70

PART - A

Answer any five Multiple Choice Questions from **10**
the following :

- 1 The reservoir for nitrogen is
(A) The atmosphere.
(B) Rocks.
(C) Amino acids.
(D) Ammonia.

- 2 All of the following are examples of negative symbiosis except
(A) Amensalism
(B) Competition
(C) Predation
(D) Commensalism

- 3 Higher plants most often absorb nitrogen from the soil in the form of
(A) Nitrites
(B) Ammonia
(C) N_2
(D) Nitrates

- 4 The filtering medium of trickling filters is coated with microbial flora, known as
- (A) Zoological film
 - (B) Geological film
 - (C) Zooglocal film
 - (D) None of these
- 5 What is an anaerobic digester?
- (A) New diet drink
 - (B) Microbe that eats hazardous waste
 - (C) Method to convert agricultural waste into a biogas
 - (D) All of the above
- 6 Which of the following is capable of oxidizing sulfur to sulfates?
- (A) Thiobacillus thiooxidans
 - (B) Desulfotomaculum
 - (C) Rhodospirillum
 - (D) Rhodomicrobium
- 7 In the process of nitrogen fixation, which of the following microorganism is involved?
- (A) Non symbiotic microorganisms only
 - (B) Symbiotic microorganisms only
 - (C) Non symbiotic and symbiotic microorganisms only
 - (D) None of the above

PART - B

Give very short answers on any five of the following : 10

- 1 Define: Mycorrhiza
- 2 Define: Nitrification
- 3 Give full name: MPN, SPC
- 4 Give full name: TOC, TOD
- 5 Enlist methods involve in secondary treatment of waste water
- 6 Give the examples of syntrophism.
- 7 Define : anammox reaction

PART - C

Give answers on any four questions in brief 16

- 1 Explain : composition of soil
- 2 Write a note on Composting
- 3 Explain : ammonification
- 4 Explain : function of soil micro flora
- 5 BOD
- 6 IMVIC test

PART - D

Give answers on any four questions in brief 16

- 1 Draw carbon cycle
- 2 ONPG test
- 3 Write note on mycorrhiza
- 4 Iron cycle
- 5 Oxidation pond
- 6 Write note on amensalism

PART - E

Write short notes/answers on any three of the following 18

- 1 Enlist methods of studying soil microflora and explain any one in detail.
 - 2 Draw nitrogen cycle and enlist organisms involved in different steps in nitrogen cycle
 - 3 Waterborne diseases
 - 4 Waste water characteristics
 - 5 Purification of drinking water
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