

Exam No: _____

Science College, Himatnagar

B.Sc. Semester-III Internal Examination Oct-2015

SUB: MI 302 SOIL AND WATER MICROBIOLOGY

Date: 17/10/2015

Time: 08:30 am to 10:00 am

Total Marks: 40

Part –A Answer any five of following.

(Choose appropriate answer: Q.1 to Q.5)

[05]

Q.1 An association in which one species of organism kills and eats another species is called _____

- (A) Symbiosis (B) Amensalism
(C) Parasitism (D) Predation

Q.2 The presence of coliforms is best example of _____

- (A) Fecal contamination (B) Mineralization
(C) Soil erosion (D) None of the above

Q.3 *Azotobacter spp.* is example of _____

- (A) Symbiotic N₂ Fixer (B) Non-symbiotic N₂ Fixer
(C) Organic decomposer (D) PSM

Q.4 The magnitude of BOD of wastewater is related to

- (A) Bacterial count (B) Amount of organic material
(C) Amount of inorganic material (D) All of the above

Q.5 Syntrophism involves

- (A) Exchange of nutrients between two species
(B) Exchange of nutrients among species
(C) No exchange of nutrients between two species
(D) No exchange of nutrients among species

(Match the appropriate pair: Q.6 to Q.7)

Interaction	Effects on population (A, B)
Q.6 Predation	- [i] (-, -)
Q.7 Symbiosis	- [ii] (0, 0)
	- [iii] (+, -)
	- [iii] (+, +)

PART-B Answer any **five** of following.

[05]

- Q.8 Define: BOD
- Q.9 Define: Enrichment culture
- Q.10 Define: Sludge
- Q.11 Define: Parasitism
- Q.12 Give any one example of symbiotic relationship
- Q.13 Enlist requirements of indole production test
- Q.14 Write down full form: VAM, CFU

PART-C Answer any **three** of the following.

[06]

- Q.15 Explain effects of rhizosphere on plant.
- Q.16 Draw labeled diagram of typical sewage treatment plant
- Q.17 Name types of waste water.
- Q.18 Give any two name of microbes that are nuisance to water.
- Q.19 Define: Mineralization, Humus

PART-D Answer any **four** of the following.

[12]

- Q.20 Short Note: Comensalism
- Q.21 Explain the microbiological characteristics of waste water.
- Q.22 Give any two examples for mutualism
- Q.23 Explain how bacteria can form nodule with leguminous plant?
- Q.24 Give any three examples of bacteria used as "Biofertilizer".
- Q.25 Give functions of soil

PART-E Answer any **two** of the following.

[12]

- Q.26 Explain principle and procedure for MPN test
- Q.27 Short Note: "Winogradsky column"
- Q.28 Short Note: Biofertilizer
- Q.29 Short Note: Mycorrhizae.