



GAY-412

Seat No. _____

B. Sc. (Sem. IV) Examination

March / April - 2017

MI-204 : Microbiology

(Microbial Biodiversity)

10 : 3 Hours]

[Total Marks : 70

Instruction : All questions are compulsory.

Answer the following Multiple Choice Questions. 10

- (1) Which method is used to study the eukaryotic biodiversity using rRNA sequence comparison ?
(A) 16s rRNA (B) 18s rRNA
(C) 23s rRNA (D) 80s rRNA
- (2) The group of individual which breed freely amongst them is constituted as
(A) Family (B) Genus
(C) Species (D) Sub species
- (3) Earth will be filled up by organic material, if the group of organism are missing
(A) Parasites
(B) Chemolithotrophs
(C) Methanogens
(D) Lithoautotrophs
- (4) Protozoa cannot reproduce by
(A) Binary fission
(B) Budding
(C) Fragmentation
(D) Sexual Reproduction

- (5) Axenic cultures :
(A) A homogeneous population of microbial cells that require Anaerobic Environment.
(B) A homogeneous population of microbial cells deriving from a single species.
(C) A population of group of multiple type organisms in habitat
(D) A population of Aerobic type organisms
- (6) Which of the following techniques can be used to estimate the number of microbes in a natural sample ?
(A) Enrichment culture
(B) Extinction culture technique
(C) Most probable number (PAN)
(D) Specialized culture method
- (7) In Lichens, Sexual reproduction is carried out by
(A) Algal partner
(B) Fungal partner
(C) Both Fungal and Algal partner
(D) Depends on habitat
- (8) Fungi usually store the reserve food material in the form of
(A) Starth (B) Lipid
(C) Glsycogen (D) Protein
- (9) What is not true for Thermophiles ?
(A) An organism thrives at relatively high temperatures, between 41 and 122°C
(B) They generally found in Hot springs and deep sea hydrothermal vents.
(C) It contains very low level of GC ration for better stability of their DNA
(D) This group of organisms also help to run PCR like techniques.

(10) Which of the following is not true for endosymbiosis ?

- (A) A condition of living within the body or cells of another organism.
- (B) A process explains development of eukaryotic organism.
- (C) A type association in which one organism benefited and other will be harmed.
- (D) Discovery associated with Mitochondria and chloroplast.

2 Give the answer of the following short questions : 10 (any five)

- (1) What is Biodiversity ?
- (2) Write detailed account on Archaeal diversity.
- (3) Explain the problem associated with Biodiversity Study using Electron Microscopy.
- (4) How you can use differential and enrichment culture techniques as Method to study biodiversity.
- (5) Explain the diversity on Extreme environment
- (6) Write a short description on Chlamydiae.
- (7) What is the meaning of prions ?
- (8) Define the term : Mycology.

3 Give the answer in brief of the following questions : (any four) 16

- (1) Explain Species and Speciation.
- (2) Write in brief : Microbial biodiversity as index of environmental change.
- (3) Write a contribution of Charles Darwin and Lamarck in Evolution.

- (4) Explain in brief : Protein Biomarkers and Biodiversity assessment.
- (5) Explain GC content in detail.
- (6) Write a note on DNA hybridization technology.

4 Give the answer in brief of the following questions : (any four)

- (1) Draw the labeled diagram of Prokaryotic and Eukaryotic cell.
- (2) Explain : Diversity amongst organism based on salt requirement.
- (3) Write a difference between Heterotrophes and Autotrophic Microorganisms.
- (4) Modes of Reproduction in Algae.
- (5) Write an economic importance of Fungi.
- (6) Explain benefits of Lichens in environment.

5 Write short note on the following questions : (any three)

- (1) Write a detailed note on general characteristics of algae.
- (2) Explain various cultivation methods for virus.
- (3) Explain PCR in detail.
- (4) How life has been evolved on earth ? Give its experimental proof with Miller and Urey Experiment.
- (5) Write a note on Value of Biodiversity.