

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Winter 2018-19 Examination

Semester: 1
Subject Code: 11201103
Subject Name: Microbial Diversity and Systematics

Date: 05/12/2018
Time: 10:30 am to 1:00 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Brief note (08)**
(a) Write a brief note on principles of microbial diversity. (08)
- Q.1. B) Answer the following questions (Any two) (04)**
(a) Short note (Each of 02 marks) (04)
1. Short note on diversity indices
2. Short note on sustainability
(b) Short note on metagenomics. (04)
(c) How modern molecular techniques help to study microorganisms? (04)
- Q.2. A) Answer the following questions. (04)**
(a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)
1. Name any two microbial culture collection centres.
2. What is phylogenetic tree? Draw bacteria phylogenetic tree.
(b) Write a note on classification based on Carl Woese three domain system. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
(a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
1. Short note on structural diversity
2. Full form of FAME
3. Full form of CLPP
(b) Short note on Evolution of life. (03)
(c) How Bergey's manual helpful for diversity to establish types of new organisms? (03)
- Q.3. A) Essay type (Each of 04 marks) (08)**
(a) Brief note on Archaeal cell walls and membranes.
(b) Explain the microbial diversity in extreme environments.
- Q.3. B) Answer the following questions (Any two) (04)**
(a) Short note (Each of 02 marks) (04)
1. Note on mutualism with one example.
2. Note on commensalism with one example.
(b) Short note on use of microscopy in Forensic Science. (04)
(c) Short note on classification of eukaryotic diversity. (04)
- Q.4. A) Answer the following questions. (04)**
(a) Short note (Each of 02 marks) (04)
1. Any two examples of extremophiles.
2. Any two industrially useful microbes.
(b) Short note on Archaeal metabolism. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
(a) Fill in the blanks (Each of 01 marks) (03)
1. Archaea exist in _____ and _____ environment.
2. Genetic exchange occurs in halobacterium is _____.
3. Phototrophic bacteria produce energy in the form of _____.
(b) Draw the structure of Eukaryotic cell. (03)
(c) Short note on Alkaline and acidic environment adaptation in bacteria. (03)