

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.sc. Summer 2018-19 Examination**

**Semester: 1**  
**Subject Code: 11201103**  
**Subject Name: Microbial diversity and systematics**

**Date: 06/04/2019**  
**Time: 10:30am To 01:00pm**  
**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) Essay type/ Brief note question (08)**  
 1. Write down classical technique to determination of microbial taxonomy  
 2. Write down molecular technique to determination of microbial taxonomy
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Short note (Each of 02 marks)  
 1. Explain and name three Microbial Culture Collection Centers  
 2. Describe fatty acid methyl esters  
 (b) What is FTIR in relation to Infrared Microscopy (04)  
 (c) Short note on importance of Biodiversity (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Fill in the blanks (Each of 02 marks) (04)  
 1. ----- is used to amplify a single DNA sequence  
 2. ----- is a "tree" showing the inferred evolutionary relationships among various biological species or other entities  
 (b) Short note on types of biodiversity (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)  
 1. Full form of FAME  
 2. Full form of CLPP  
 3. Short note on structural diversity  
 (b) Explain phase contrast microscopy (03)  
 (c) Short note on evolution of life (03)
- Q.3.A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Explain microbial diversity in extreme environment.  
 (b) Brief note on archaeal cell walls and membranes.
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Describe global biodiversity. (04)  
 (b) Short note on Fluorescence microscopy (04)  
 (c) Short note on Microbial fingerprinting. (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Fill in the blanks (Each of 02 marks) (04)  
 1. Rheinberg illumination is used in conjunction with -----microscopy  
 2. Eastern blotting is used to study-----modification  
 (b) Short note on bright field microscopy (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 Short note / Multiple choice questions. (Each of 01 marks) (03)  
 (a) Describe PCR in detail (03)  
 (b) Short note on scanning electron microscopy (03)  
 (c) Short note on isolation of microbial pure cultures (03)