

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**B.Sc., Winter 2017-18 Examination**

**Semester: 1**  
**Subject Code: 11103103**  
**Subject Name: Biochemical Techniques**

**Date: 28-12-2017**  
**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 (Each of 04 marks) (08)**  
 (a) Give the principle and procedure of ultracentrifugation  
 (b) Write a note on DNA finger printing
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Short note (Each of 02 marks)  
 1. How to detect the radioisotopes  
 2. Types of differential centrifugation  
 (b) Write the principle and applications of NMR (04)  
 (c) Short note on competent cells (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Short note (Each of 02 marks)  
 1. Short note on RNA isolation  
 2. Applications of ultracentrifugation in biology  
 (b) Write the steps involved in DNA sequencing (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Do as directed (Each of 01 marks)  
 1. Buffer  
 2. Units for % solution  
 3. Molarity  
 (b) Write the steps involved in Chemical synthesis of nucleotides (03)  
 (c) Explain briefly alpha, beta and gamma particles. (03)
- Q.3. A) Essay type (Each of 04 marks) (08)**  
 (a) write a brief note on PCR  
 (b) How to isolate mRNA from mammalian tissues
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Short note (Each of 02 marks)  
 1. Units for radioisotopes  
 2. DNA foot printing  
 (b) Give the details of ESR technique (04)  
 (c) Write the flow chart of DNA isolation from tissue (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Short note (Each of 02 marks)  
 1. Short note on Agarose gel electrophoresis  
 2. Importance of PH in buffer preparation  
 (b) Give the details of GM counter (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 (a) Write in one sentence (Each of 01 marks)  
 1. Acid  
 2. Rotar  
 3. RCF  
 (b) Short note on types of rotors (03)  
 (c) Short note on types of centrifuge. (03)