

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

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

Date: 20/12/2018
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) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
(a) Enlist types of centrifugation techniques and describe anyone technique in detail.
- Q.1. B) Answer the following questions (Any two) (04)**
(a) Short note (Each of 02 marks)
1. Give names of two commonly used buffers
2. Give one example of each : Weak acid and Strong acid
(b) Write properties of good buffer (04)
(c) Define with equation : Molarity and Molality (04)
- Q.2. A) Answer the following questions. (04)**
(a) Short note (Each of 04 marks)
1. Write the principle of PCR technique. (04)
(b) Write a short note on DNA fingerprinting (04)
- Q.2. B) Answer the following questions (Any two) (03)**
(a) Short note/ Multiple choice questions. (Each of 01 marks)
1. Write the applications of centrifugation (any two).
2. Draw the Structure of Purine and Pyrimidine nucleotides
3. Which reagent is used for mRNA isolation?
(b) Write a short note of Ultracentrifugation. (03)
(c) Define DNA Footprinting (03)
- Q.3. A) Essay type (Each of 08 marks) (08)**
(a) Describe the isolation of m-RNA from mammalian cells.
- Q.3. B) Answer the following questions (Any two) (04)**
(a) Short note (Each of 04 marks)
1. Write the principle and application of ESR technique (04)
(b) Describe purification of DNA. (04)
(c) Write a short note on DNA sequencing. (04)
- Q.4. A) Answer the following questions. (04)**
(a) Short note (Each of 04 marks)
1. Explain alpha-decay and beta-decay (04)
(b) Write a short note on Scintillation counter. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
(a) Short note/ Multiple choice questions. (Each of 01 marks)
1 Explain the applications of MRI (03)
(b) State the full form of NMR, ESR and MRI. (03)
(c) Define percentage of solution. Write calculation for 10% NaCl solution (03)