

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

Semester: 1
Subject Code: 11203103
Subject Name: Analytical Tools and Technique

Date: 07/12/2018
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) Write difference between SEM and TEM.
- Q.1. B) Answer the following questions (Any two) (04)**
(a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)
1. Normal Vibration can be divided in to how many groups in IR?
2. List out staining technique for electron microscopy.
(b) Explain Lambert's and beer's law. (04)
(c) Draw and describe the light pathway of Dark field microscopy. (04)
- Q.2. A) Answer the following questions. (04)**
(a) Short note on affinity chromatography. (04)
(b) Write short note on fluorescence microscopy. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
(a) Short note on lyophilization. (03)
(b) Write application of radioisotopes in biological sciences. (03)
(c) Write down Basic principle and application of TLC. (03)
- Q.3. A) Essay type (08)**
(a) What is chromatography? Describe Ion exchange chromatography.
- Q.3. B) Answer the following questions (Any two) (04)**
(a) Describe method which is used to detect specific DNA sequences in DNA sample. (04)
(b) Write down instrumentation of UV spectroscopy. (04)
(c) How to identify a crystalline structure by X-ray diffraction. (04)
- Q.4. A) Answer the following questions. (04)**
(a) Short note on phase contrast microscopy. (04)
(b) Short note on HPLC. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
(a) Define: Rf value, Centrifugal force, Theoretical plates. (03)
(b) Write down basic principle and types of rotor of Centrifuge. (03)
(c) Short note on high speed centrifuge. (03)