

PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER REMEDIAL EXAMINATION, MARCH 2020
B.Sc. Chemistry/Maths/Phys/Geology Semester 2

Paper Name: Basic Instrumentation Techniques

Date: 19/03/2020

Paper Code: 11105153

Time: 45 min.

Max. Marks: 20

Instructions:

1. All questions are compulsory and options are given in first and second question only.
 2. Numbers to the right of question indicate the marks of respective question.
-

- Q. 1** Do as directed (Attempt Any One). **(04)**
- a. Write a note on Application of UV-Visible Spectroscopy
 - b. Describe Instrumentation of IR Spectroscopy
- Q. 2** Attempt any *three* questions of the following. (Each question carries *TWO* mark) **(06)**
- a. Give difference between absorption and emission spectroscopy
 - b. Draw the diagram of Electromagnetic spectrum
 - c. Give the functional vibration of IR spectroscopy
 - d. Explain Bathochromic effect
- Q. 3** Do as directed. Attempt *all* five questions. (Each question carries *ONE* mark) **(05)**
- a. Define Frequency
 - b. Give principle of Lambert's-Beer Law only
 - c. Give difference between Accuracy and Precision
 - d. Give any two limitation of IR spectroscopy
 - e. Give energy range of Near and Vacuum UV spectroscopy
- Q. 4** Multiple choice questions. (Write Correct Option). (Each question carries *ONE* mark) **(05)**
- 1 What is symbol of Wavelength?
(A) Γ (B) δ
(C) λ (D) Λ
 - 2 $A = \epsilon cl$, where, $\epsilon =$ _____
(A) Molar Conductivity (B) Molar Concentration
(C) Molar Extinction Coefficient (D) Molar Sorption Co-efficient
 - 3 $\pi-\pi^*$ transition in UV-Visible spectroscopy is also known as _____
(A) Q-Band (B) K-band
(C) R-Band (D) S-Band
 - 4 Lycophene gives red colour in Tomato, because of,
(A) 15 Conjugation (B) 10 Conjugation
(C) 13 Conjugation (D) 8 Conjugation
 - 5 What is absorption band of CO_2 in IR spectroscopy?
(A) 2550 cm^{-1} (B) 2350 cm^{-1}
(C) 2505 cm^{-1} (D) 2305 cm^{-1}

-- End of Paper--