

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Summer-2017-18 Examination

Semester: 2
Subject Code: 11205153
Subject Name: Physical Chemistry-II

Date: 11/05/2018
Time: 10:30am to 1:00pm
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) Write in detail. (08)**
(a). Define Adsorption. Explain BET Isotherm with diagram.
(b). Describe Homogeneous and Heterogeneous catalysis with examples.
- Q.1. B) Answer the following questions (Any two) (04)**
(a) Write a short note:
1. Define Catalytic promoters. Write their examples.
2. Mention four uses of Adsorption. (04)
(b) Describe Phase Transfer Catalysis (PTC) with examples. (04)
(c) Differentiate between Chemisorptions and Physiosorptions with examples. (04)
- Q.2. A) Answer the following questions. (04)**
(a) Write short answers:
1. State Henry's law with equation.
2. State Raoult's law with equation.
(b) Explain Duhem-Margules equation. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
(a) Explain Vapour pressure curves for Non-Ideal Solutions with diagrams. (03)
(b) Mention the Applications of Raoult's law. (03)
(c) Mention main points on the deviation from Ideal gas behaviour. (03)
- Q.3. A) Write in detail. (08)**
(a). Explain diagram and mechanism of Geiger-Muller counter.
(b). Describe Artificial Transmutation of Elements.
- Q.3. B) Answer the following questions (Any two) (04)**
(a) Write short answers:
1. Define Isotopes and Isotones with examples.
2. Define Isobars and Iso-electronic series with examples. (04)
(b) Write a note on Transuranic series. (04)
(c) Describe Shell model. (04)
- Q.4. A) Answer the following questions. (04)**
(a) Write short answers:
1. Describe Phophorescence.
2. Describe Flourescence.
(b) Explain photochemical decomposition of Acetaldehyde. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
(a) Explain photochemical decomposition of HI. (03)
(b) Write a note on Beer's law. (03)
(c) Explain Photochemical equilibrium. (03)