



DDD-1414

M. Sc. (Part I) (Sem. II) (Reg., Self Fin. & Eve.)
Examination

April / May - 2016

Chemistry : Paper - IV
(Recent Trends in Chemistry)

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवकी पर अवश्य कपवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
M. Sc. (Part I) (Sem. II) (Reg., Self Fin. & Eve.)

Name of the Subject :
CHEMISTRY : PAPER - IV

Subject Code No. : 1 4 1 4 Section No. (1, 2,.....): Nil

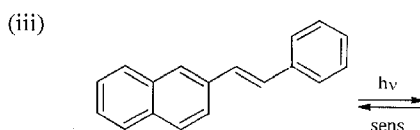
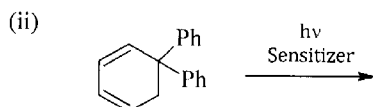
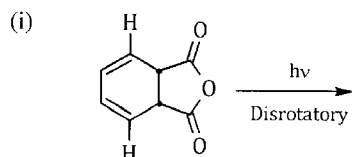
Seat No. :

Student's Signature

- (2) All questions are compulsory.
(3) Figures to the right indicate full marks of the questions.

1 Answer any three of the following : 18

- (a) Discuss singlet state in terms of aromaticity, magnetic behaviour and life time.
(b) Explain the consequences of absorption of light energy. State different modes of dissipation of energy involved.
(c) Explain :
(i) "Fluorescence is faster than phosphorescence."
(ii) "Only UV-Visible region of light produce chemical change."
(d) Explain the following reaction giving mechanism and end products.



- 2** Answer any **three** of the following : **18**
- (a) What is Nanotechnology ? Explain term soft matter and differentiate soft and hard matter.
 - (b) What do you mean by supra-molecular chemistry ? Explain host guest chemistry involving cyclodextrins.
 - (c) What is supramolecular chemistry ? Explain its history in brief.
 - (d) Give brief account on chemical vapour deposition and atomic layer deposition for synthesis of nanomaterials.
- 3** Answer any **three** of the following : **18**
- (a) What is supercritical state ? Discuss with application supercritical carbon dioxide.
 - (b) What is decaff ? Explain any two methods for decaffination of coffee.
 - (c) Enlists different ionic liquids with chemical structures. Explain their properties and how they are used as green solvents ?
 - (d) Discuss with examples waste minimization by atom economy.
- 4** Answer any **four** of the following : **16**
- (a) Describe useful energy levels for photochemical reactions. Give general wavelength ranges for lowest energy absorption band of Alkenes and aromatic compounds. Give three examples of natural photochemical reactions.
 - (b) How photochemical reactions are advantageous over conventional reactions. Compare the products obtained from Norrish type-I and II reactions.
 - (c) Give the importance of microwave synthesis in green chemistry. How it is differ from the conventional synthesis ?
 - (d) Explain signal input/output in crown ether in detail.
 - (e) Discuss the green synthesis of adipic acid and paracetamol.
 - (f) Give brief account on a versatile host.
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