



AC-1417

M. Sc. (Part - I) (Sem. II) Examination

April / May - 2015

Chemistry : Paper - IV
(Recent Trends in Chemistry)
(Regular & Evening)

Time : 3 Hours]

[Total Marks : 70

Instructions : (1)

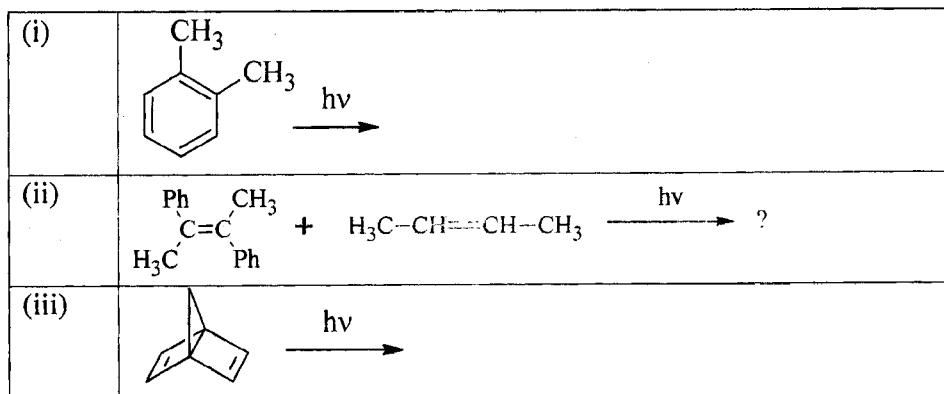
नीचे दशांशों में निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. : <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Name of the Examination : M. Sc. (Part - I) (Sem. II)	Student's Signature
Name of the Subject : Chemistry - IV (Recent Trends in Chem.) (Regular & Evening)	
Subject Code No. : <input type="text" value="1"/> <input type="text" value="4"/> <input type="text" value="1"/> <input type="text" value="7"/> Section No. (1, 2,.....): <input type="text" value="Nil"/>	

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

Q.1 Answers any three of the following

18

- Give the possible ways of electronic excitation. Explain photochemistry of isomerization of olefins giving suitable illustrations.
- Discuss the principles of photochemistry. Calculate the energy involved with 300 nm light.
- Explain that the carbonyl compounds on irradiation in presence of olefins yield oxetanes.
- Write the useful energy levels for photochemical reactions. Give general wavelength ranges for lowest energy absorption band of Alkenes and Aromatic compounds.
- What are the expected products in the following photochemical reactions:



- Q.2 Answers any three of the following 18
- a. Enlist the types of lithographic method for nanomaterials. Explain any three methods.
 - b. Which is the first artificial host molecules? Describe its discovery and its properties in brief.
 - c. Explain in brief : optical probe characterization method and electron probe characterization method.
 - d. Discuss the historical occurrence of crown ethers and their importance in supramolecular chemistry.
- Q.3 Answers any three of the following 18
- a. What are green solvents? Explain. Give the green synthesis of Paracetamol and adipic acid.
 - b. Classify ionic liquids with their chemical structures. Discuss the different applications of ionic liquids.
 - c. Define biobased material. Names different biobased materials and discuss biodegradable polymers with examples.
 - d. Define green Chemistry. Explain in short twelve principles of green chemistry.
- Q.4 Answers any three of the following 16
- a. The quantum yield for benzpinacol transformation is about 1. How can this information be used for elucidation of the mechanism of the reaction?
 - b. Why cyclic ketones are formed if α , β - unsaturated ketones are irradiated in presence of sensitizers.
 - c. Define supercritical fluid. Discuss the different applications of supercritical carbon dioxide.
 - d. Write a short note on any arc discharge and plasma fabrication methods of nano particles.
-