

# MANONMANIAM SUNDARANAR UNIVERSITY

DIRECTORATE OF DISTANCE AND CONTINUING EDUCATION

INTERNAL ASSIGNMENT FOR EXAMINATIONS

**M. Sc Chemistry – Second Semester**

**Organic Reaction Mechanism - II**

**Subject Code: SCHM21**

- 1.) (A) i) Stereochemistry of pyrolytic elimination.  
ii.) Hoffmann and saytzeff rules.

(OR)

- (B) Mechanism of Swern and corey-kim oxidation.

- 2.) (A) Write the mechanism of the following rearrangements:  
i) Benzil – Benzilic acid  
ii.) Baeyer – villager oxidation.

(OR)

- (B) Cross – coupling reactions and its applications  
i) Heck  
ii.) Suzuki  
iii.) Stille

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**M. Sc Chemistry – Second Semester**

**Physical Chemistry - I**

**Subject Code: SCHM22**

- 1.) (A) Discuss the determination of activity and activity coefficients by vapour pressure and freezing point methods.

(OR)

- (B) Derive and compare Fermi Dirac & Bose-Einstein statistics.

- 2.) (A) i) Einstein and Debye models of heat capacity.  
ii.) Onsager reciprocal relationship.

(OR)

- (B) i) Discuss the kinetics and mechanism of acid-base catalysis.  
ii.) Derive the rate expression for  $\text{H}_2 - \text{Br}_2$  reaction and discuss the kinetics of the chain reaction.

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**M. Sc Chemistry – Second Semester**

**Green Chemistry**

**Subject Code: SCHE21**

1.) (A) Twelve principles of Green Chemistry with examples.

(OR)

(B) Green Reagents and green solvents.

2.) (A) Phase transfer catalysis.

(OR)

(B) i) Microwave assisted green synthesis.

ii.) Ultrasound assisted green synthesis.

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INTERNAL ASSIGNMENT FOR EXAMINATIONS

**M. Sc Chemistry – Second Semester**

**Bio Inorganic Chemistry**

**Subject Code: SCHE22**

- 1.) (A) Discuss the structural aspects and functions of any two metalloenzymes.
- (OR)
- (B) Give the structure and classification of cytochromes. Discuss the structure and catalytic cycle of cytochrome P-450.
- 2.) (A) Structure and functions of chlorophyll pigments in photo system I & II
- (OR)
- (B) i) Anticancer activity of cis-platin.  
ii.) Why transplatin is inactive?  
iii.) MRI imaging agents.

# **MANONMANIAM SUNDARANAR UNIVERSITY**

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INTERNAL ASSIGNMENT FOR EXAMINATIONS

**M. Sc Chemistry – Second Semester**

**Industrial Chemistry**

**Subject Code: SCHS21**

1.) (A) Give the preparation and properties of red, yellow and green pigments.

**(OR)**

(B) Discuss the composition and properties of soda lime glass, borosilicate and photosensitive glass.

2.) (A) i) Manufacture of Portland cement

ii.) Principle and process of Fraction distillation of petroleum.

**(OR)**

(B) i) Classification of wastes based on source and composition.

ii.) Discuss the management of wastes.