

This question paper contains 4 printed pages]

AI—140—2017

FACULTY OF SCIENCE

M.Sc. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2017

(CBCS Pattern)

ORGANIC CHEMISTRY

Paper CH-542/2

(Bio-organic and Green Chemistry)

(Monday, 24-4-2017)

Time : 2.00 p.m. to 5.00 p.m.

Time— Three Hours

Maximum Marks—75

- N.B. :—*
- (i) All questions are compulsory.
 - (ii) Figures to the right indicate full marks.
 - (iii) Multiple choice questions (MCQs) should be attempted only once on page No. 3 of answer-book with complete answers.

1. Solve any *three* : 15
 - (a) Discuss the structure of uracil and thiamine.
 - (b) Give the types of RNA with their functions.
 - (c) Explain the role of PTC in Darzen reaction.
 - (d) Use of DMC as green reagent.
 - (e) What is atom economy ? Explain.
2. Answer the following (any *three*) : 15
 - (a) Explain the hydrolysis of Nucleic acid.
 - (b) Microwave assisted Dieder Alder reaction.
 - (c) Reaction specificity in enzymes.
 - (d) Discuss the secondary structure of DNA.
 - (e) Explain biochemical reduction with *two* suitable examples.

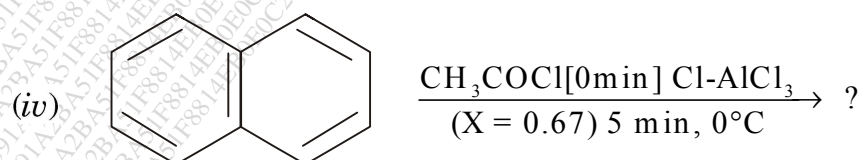
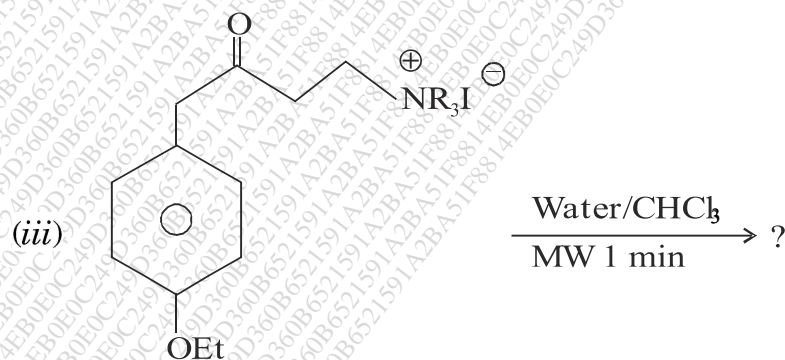
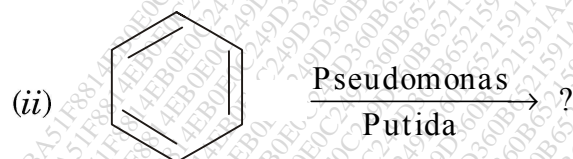
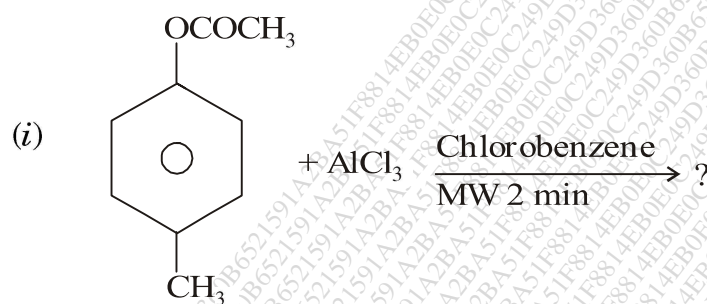
P.T.O.

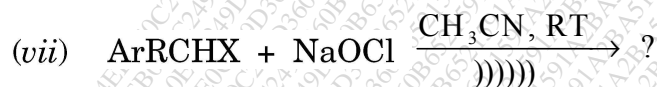
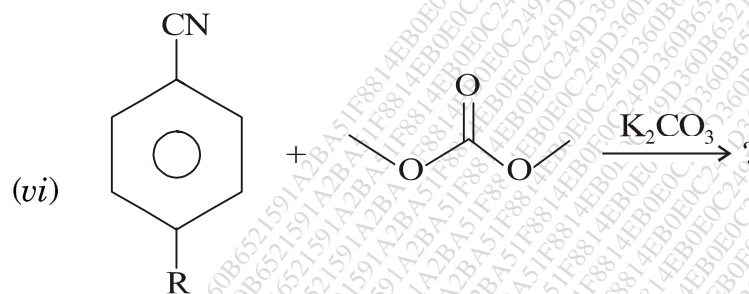
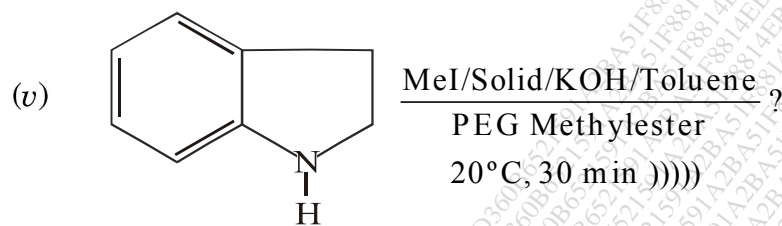
3. (A) Explain double Helix structure of DNA given by Watson and Crick. 7

Or

Why is the need of green chemistry ? Explain in detail.

- (B) Predict the products (Any four) : 8





4. (A) Discuss the *twelve* principles of green chemistry in detail. 7

Or

Explain Lock and Key mechanism of enzymes.

(B) Explain reactions in acidic ionic liquids and neutral ionic liquid. 8

Or

What is phase transfer catalyst ? Give the advantages of PTC to green synthesis.

5. (A) Select the *correct* answer from the following multiple choice questions. 5

(i)following base is not present in DNA.

(a) Uracil (b) Guanine

(c) Adenine (d) Cytosine

P.T.O.

- (ii)is green protocol for organic synthesis.
- (a) Ultrasound
 - (b) Ionic liquid
 - (c) Microwave induced system
 - (d) All of the above
- (iii) The term.....is used to describe effect of ultrasound waves in chemical reactivity.
- (a) Nanochemistry
 - (b) Sonochemistry
 - (c) Piezochemistry
 - (d) Thermochemistry
- (iv) Microwaves ranges from.....in wavelength in electro-negative spectrum.
- (a) 1 m – 10 m
 - (b) 1 cm – 1 m
 - (c) 1 μ m – 1 m
 - (d) 1 nm – 1 cm
- (v) There areprinciples of green chemistry.
- (a) 10
 - (b) 12
 - (c) 14
 - (d) None of these
- (B) Write short notes on (any *two*)
- (i) Give the classification of enzyme.
- (ii) Alkylation of reactive methylene compound under solvent free condition.
- (iii) Three point attachment theory.

10