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Reg. No. :

Code No. : 10026 E Sub. Code : SECH 6 A/
AECH 61

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2023.

Sixth Semester

Chemistry

Major Elective – GREEN CHEMISTRY

(For those who joined in July 2017 – 2020)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- The percentage ratio of molecular weight of product and molecular weight of reactants is called
(a) Yield
(b) Carbon efficiency
(c) Atom economy
(d) Mass intensity
- Concept of Atom Economy was introduced by
(a) Bohr (b) William
(c) Rontgen (d) B.M. Trost
- Dimerisation of Butadiene gives
(a) Octa-1,4,6-triene
(b) Octa-1,3,6-triene
(c) Octa-1,2,3-triene
(d) Octa-1,5,6-triene
- _____ is a preferred green solvent.
(a) Methanol (b) Ethyl acetate
(c) Toluene (d) Water
- The example for oxido reductase biocatalyst is
(a) Carboxylases (b) Aldolases
(c) Ketolase (d) Dehydrogenase
- The catalyst which is used to remove heavy metals in water is
(a) MCM-41
(b) PFC
(c) Oxido-reductase
(d) Modified PEG supported enzyme

7. Green synthesis of catechol starts from
- (a) Fructose (b) Sucrose
(c) D-Glucose (d) Acetaldehyde
8. The rearrangement involved in the green synthesis of Paracetamol
- (a) Claisen rearrangement
(b) Hofmann rearrangement
(c) Wagnere rearrangement
(d) Beckmann rearrangement
9. Father of Green Chemistry is
- (a) John C. Warner (b) Paul T. Anastas
(c) Lewis (d) Henry
10. Drug used for reducing nausea and vomiting during pregnancy is
- (a) Titanium dioxide
(b) Thalidomide
(c) Prufen
(d) Paracetamol

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the terms "Mass Intensity and Mass Productivity".
Or
(b) Discuss briefly "the concept of selectivity".
12. (a) Discuss the applications of Ionic liquids in organic synthesis.
Or
(b) Explain the principle and procedure of super critical fluid extraction.
13. (a) Explain photosensitised super acid catalyst with examples.
Or
(b) Write notes on Bio-Catalysts with types and examples.
14. (a) Give the green synthesis method of Ibu Profen.
Or
(b) Discuss about the microwave assisted reactions.

15. (a) Discuss about versatile bleaching agents.

Or

- (b) Discuss about the choice of starting materials with examples.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss briefly the need and scope of green chemistry.

Or

- (b) (i) Explain the term atom economy and carbon efficiency with an example.
(ii) Define the terms yield and effective mass yield.

17. (a) Draw the phase diagram of carbon dioxide. Explain its super critical state.

Or

- (b) What are green reagents? Explain the action of dimethyl carbonate and polymer supported reagents in synthesis.

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18. (a) Write notes on (i) Activated Hydrotalcites
(ii) Polymer supported catalyst.

Or

- (b) Discuss about (i) TAML catalyst
(ii) Perfluorinated catalyst.

19. (a) Discuss the green synthesis of (i) Citral
(ii) Paracetamol.

Or

- (b) Explain in detail about the Ultra sound assisted reactions.

20. (a) Discuss the twelve principles of Green Chemistry with suitable examples.

Or

- (b) Explain the important role of green chemistry in day to day life.

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