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Reg. No. : \_\_\_\_\_

Code No. : 10452 E      Sub. Code : CSCH 31

B.Sc (CBCS) DEGREE EXAMINATION,  
APRIL 2023

Third Semester

Chemistry — Skill Based Subject

GREEN CHEMISTRY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The atom economy obtained for green synthesis is in the range of
- (a) 62 - 70 %
  - (b) 72 - 82 %
  - (c) 40 - 50 %
  - (d) 90 - 100 %

2. Which of the following is not a principle of green chemistry?

- (a) Green solvents and auxiliaries
- (b) Use of renewable feedback
- (c) Hazardous Chemical Synthesis
- (d) Design for energy efficiency.

3. What is the starting material for nylon - 6,6 is

- (a) Acetic anhydride
- (b) 2-methyl propyl benzene
- (c) Nitric acid
- (d) Adipic acid

4. Which of the following is a green solvent used for bleaching clothes?

- (a) Hydrogen peroxide
- (b) Tetrachloro ethane
- (c) Benzene
- (d) Toluene

5. What is the effect of enzymes on the rate of biochemical reactions?
- (a) The rate decreases
  - (b) The rate increases
  - (c) It does not change
  - (d) Either (b) or (a)
6. The dibasic acid is used in its \_\_\_\_\_
- (a) liquid form      (b) solid state
  - (c) impure form      (d) pure form
7. Use of \_\_\_\_\_ has led to high yielding synthesis of a thermally unstable Hofmann elimination product.
- (a) Ultra sound
  - (b) Hyper sound
  - (c) Low frequency
  - (d) Microwave irradiation
8. The chemical effect of ultrasound was first reported by
- (a) Richards & Loomis
  - (b) Pierre curie
  - (c) Thorny craft
  - (d) Barnaby

9. Which of the following is a commonly used material in solar cell?
- (a) Aluminium      (b) Germanium
  - (c) Silicon      (d) Copper
10. How is hydrogen stored physically?
- (a) As atoms
  - (b) By compressing hydrogen gas
  - (c) In the form of hydrides
  - (d) In the form of water.

PART B — (5 × 5 = 25 marks)

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

11. (a) Define green chemistry. Give the needs of green chemistry.
- Or
- (b) Discuss the Rearrangement reactions with 100% atom economy.
12. (a) Give the advantages and applications of super critical fluid.
- Or
- (b) Discuss about dry cleaning super. critical polymerisation.

13. (a) Explain bio catalyst.

Or

(b) Define acid-base catalyst. Explain the TAMM catalyst.

14. (a) Explain the mechanism of Claisen rearrangement.

Or

(b) Discuss alkylation of ultrasound assisted reactions.

15. (a) Explain the sources of Biomass.

Or

(b) Explain the importance of wind energy.

PART C — (5 × 8 = 40 marks)

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

(a) Describe the environmental load factor and Reaction selectivity.

Or

(b) Explain the following :

(i) Any five principles of Green Chemistry.

(ii) 100% Atom economy in elimination reactions.

17. (a) Give the reactions in water and near critical water region in super critical water.

Or

(b) Describe the extraction of super critical fluids and its applications.

18. (a) Explain the hydrolytic process prefluorinated catalyst.

Or

(b) Describe the photo sensitized super acid catalyst.

19. (a) Explain ultrasound reaction in coupling reaction and Cannizzaro reactions.

Or

(b) Give the microwave assisted reactions in the hydrolysis of benzoyl chloride and methyl benzoate.

20. (a) Describe the storage of solar energy.

Or

(b) Give the detail information of wind energy its importance and uses.