

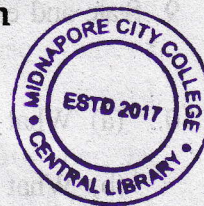
2023

6th Semester Examination

CHEMISTRY (Honours)

Paper : DSE 3-T

[CBCS]



Full Marks : 40

Time : Two Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

[Green Chemistry]

Group - A

Answer any **five** questions : $2 \times 5 = 10$

1. What is trans-fat?
2. What are the criteria of Right fit pigments?
3. Why dyes and pigments are called 'colorants'?
4. Define the term LD_{50} and LC_{50} .
5. Mention disadvantages of TBTO as antifoulant.
6. What are bioplastics? Give an example.
7. Give one example of solvent free reaction.
8. What do you understand by inherently safer design (ISD)?

P.T.O.



(2)

Group - B

Answer any *four* questions : 5×4=20

9. State and explain the second principle of green chemistry. 5
10. (a) What is 'Sonoluminescence'? 4
(b) What is the full form of DSIDA? 1
11. How do you prepare DSIDA by MONSONTO's method? What are the advantages of this process? 5
12. Synthesize glucose to adipic acid through green route. 5
13. (a) What do you mean by 'Cradle to Cradle carpeting'? 2
(b) Give one example of environmentally benign antifoulant and draw the structure of its main ingredient. 3
14. (a) What are marine antifoulants or antifouling agents? 2
(b) Give one example of most commonly used marine antifoulant and give its structure. 2
(c) What are main ingredients of 'ECO WORK'? 1

Group - C

Answer any *one* question : 10×1=10

15. (a) Give outline of conventional and green synthesis of catechol. 4

(3)

- (b) What are the advantages of the green method over conventional method for catechol synthesis? 3
- (c) What is cocrystallization? Write a short note on cocrystallization controlled solid phase synthesis (C_3S_3). 3
16. (a) How Benzoin condensation reaction can be achieved using Thiamine hydrochloride as a catalyst instead of toxic cyanide? 4
(b) How ionic liquids overcome the problems of toxicity associated with organic liquids used in the synthesis of organic compound? 3
(c) Give one example of ultrasound assisted Simmons-Smith reaction. 3





(4)

OR

[Inorganic Materials of Industrial Importance]

Group - A

Answer any *five* questions : 2×5=10

1. What is phase transfer catalysis?
2. What is a Xerogel?
3. What is "Anodising process"?
4. Difference between ferrous and non-ferrous alloys.
5. Give the composition of triple super phosphate.
6. Differentiate between different types of steel.
7. Which are the additives used in paints?
8. Why do alloying enhance the properties of material?

Group - B

Answer any *four* questions : 5×4=20

9. (a) What are the essential ingredients of paints?
(b) What are the differences between paints and varnish? 2+3
10. (a) What are propellants? How they can be classified?
(b) What is the difference between explosive and rocket propellants? 1+2+2

(5)



11. (a) What is plaster of paris?
(b) Why gypsum is added during the manufacture of portland cement? 2+3
12. (a) What is decarburization reaction?
(b) How the surface area of electrode plays a pivotal role in fuel cell? 2+3
13. (a) What are the differences between Mortars and Concrete?
(b) What are the uses of thinners? 3+2
14. (a) How fibre glass different from safety glass?
(b) Differentiate between primary and secondary batteries. 2+3

Group - C

Answer any *one* question : 10×1=10

15. (a) Describe the process required for the manufacturing of Urea with flow diagram.
(b) Write down the advantages and disadvantages of ceramic products.
(c) Write a short note on RDX.
(d) What is enamel? 4+2+2+2

P.T.O.

16. (a) Discuss the principles, properties and industrial applications of catalysts.
- (b) Write down the advantages and disadvantages of carbonfibre.
- (c) Write a short note on quick setting Cement.
- (d) What is soundness of cement? 4+3+2+1

