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Reg. No. : .....

Code No.: 30488 E

Sub. Code: CSCH 42

B.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2024.

Fourth Semester

Chemistry

Skill Based Subject – INDUSTRIAL CHEMISTRY

(For those who joined in July 2021&2022 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- Which of the following ion is related to alkalinity of water?  
(a)  $\text{CO}_3^{2-}$  (b)  $\text{Cl}^-$   
(c)  $\text{Br}^-$  (d)  $\text{Fe}^{2+}$
- Identify a method used for the removal of hardness from water  
(a) ion-exchange (b) Iodination  
(c) Sedimentation (d) Chlorination
- Select a direct petrochemical from the following  
(a) methanol (b) resins  
(c) rubber (d) plastics
- Which of the following is petroleum fraction has high carbon content?  
(a) uncondensed gases (b) crude naptha  
(c) gasoline (d) paraffin wax
- Pick out the name of a primary battery from the following :  
(a) Leclanche cell (b) Lead storage battery  
(c) Li battery (d) Fuel cell
- Non-rechargeable battery among the following is \_\_\_\_\_  
(a) Lead storage battery  
(b) Leclanche cell  
(c) Polymer cell  
(d) Fuel cell

7. The corrosion of iron is prevented by \_\_\_\_\_ coating.

- (a) Zinc (b) NaCl  
(c) Peroxide (d) Acid

8. Which of the following metal has low hydrogen overvoltage?

- (a) Zn (b) Pb  
(c) Fe (d) Hg

9. Plaster of Paris is obtained from \_\_\_\_\_.

- (a) Gypsum (b) NaCl  
(c) Silica (d)  $\text{CaCO}_3$

10. Which of the following can be used as a repellent?

- (a) Silicone carbide (b) Plaster of Paris  
(c) Naphthalene balls (d) Indigo dye

PART B — (5 × 5 = 25 marks)

Answer ALL questions, by choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Give a detailed study of different sources of water.

Or

(b) Criticize the disadvantages of hard water.

12. (a) Discuss the composition of crude petroleum.

Or

(b) What are synthetic fuels? Explain.

13. (a) Draw the diagram of a solar cell and write their components.

Or

(b) Write the properties of electrical insulating materials.

14. (a) Analyze the economical aspects of corrosion.

Or

(b) Summarize the principle of anodic protection with an example.

15. (a) Write the names of colouring materials used for the preparation different colour fountain pen ink.

Or

(b) Give the raw materials for the preparation of silicon carbide crucible. Write its uses.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, by choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Evaluate the role of ion exchange process and Lime soda process in softening the hard water.

Or

- (b) Predict a suitable methodology for the estimation of temporary hardness and permanent hardness.

17. (a) Explain the refining of petroleum.

Or

- (b) What are petrochemicals? Give any two examples and their applications.

18. (a) Enumerate the principle and working of lithium battery.

Or

- (b) What is battery? Explain their types. Give examples.

19. (a) Discuss chemical and electrochemical corrosion.

Or

- (b) Give a detailed analysis of corrosion protection.

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20. (a) Describe the preparation of chalk and naphthalene balls.

Or

- (b) Write the raw materials and procedure for the preparation of safety matches.

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