

TDC (CBCS) Even Semester Exam., 2022~~SEM~~

CHEMISTRY

( 6th Semester )

Course No. : CHMDSE-601T

( Inorganic Materials of Industrial Importance )

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

SECTION—A

Answer any *fifteen* as directed :

1×15= 15

1. The colour imparted by ferrous oxide in glass is \_\_\_\_ (green/blue).  
( Choose the correct answer )
2. What is photosensitive glass?
3. What are the raw materials used in making the ceramic products?
4. Give an example of clay mineral.

5. What are the raw materials of cement?
6. What is the role of nitrifying bacteria in the soil?
7. Write down the chemical composition of ammonium sulphate nitrate (ASN).
8. What is the importance of phosphate fertilizers?
9. What is pigment?
10. Give an example of thinner for water-based paint.
11. What is toner?
12. Where do you apply enamel paint?
13. What is fuel cell?
14. Write one use of lead-acid battery.
15. What is the role of an electrolyte inside the battery?
16. Give one advantage of solid-state electrolyte battery.

17. What is stainless steel?
18. Give one example of ferrous alloy.
19. Write the chemical formula of limestone.
20. What is nitriding?

## SECTION—B

Answer any *five* questions :

2×5=10

21. Write down the two industrial importances of carbon nanotubes.
22. What is the role of gypsum in the manufacture of cement?
23. Give the essential qualities of a good fertilizer.
24. Write briefly about potassium sulphate fertilizer.
25. What is surface coating and why is it necessary?
26. What are the basic components of paints?
27. Write four essential components of a battery.

28. What are the advantages of fuel cells?
29. Why are alloys classified by iron?
30. What is decarburizing reaction?

## SECTION—C

Answer any *five* questions :

5×5=25

31. (a) What are ceramic materials? 1  
 (b) What are the properties of ceramics? 3  
 (c) Write two uses of ceramics. 1
32. What is meant by setting of cement? Explain the chemistry of the process of setting of cement. 1+4=5
33. Describe about different types of nitrogenous fertilizer taking one suitable example of each type. 5
34. Describe the preparation of calcium ammonium nitrate (CAN). Why is it considered as a good fertilizer? 3+2=5
35. (a) Why is it important to prepare metal surface before painting? 2

- (b) Describe the environmental issues associated with paint. 3
36. (a) What are the different types of metallic coating? 2  
 (b) Write on metal spraying and anodizing. 3
37. What is a lithium-ion battery? Briefly describe its working principle. 1+4=5
38. Write short notes on : 2½×2=5  
 (a) Solar cell  
 (b) Polymer cell
39. (a) What are the two common classifications of alloy? Give one example of each type. 2  
 (b) Write a note on gold alloys. 3
40. (a) Write about different heat treatment techniques for metal surface. 3  
 (b) What are the defects occurred during heat treatment of steel? 2

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