

TDC (CBCS) Even Semester Exam., 2023

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.** Write the formula of *ortho*-silicate anion with its structure.
- 2.** What do you mean by safety glasses?
- 3.** What do you mean by advanced ceramics?
Give one example.
- 4.** Mention one use of fullerenes.

(2)

5. What are binders?
6. What are organic fertilizers?
7. Write the uses of ammonium nitrate as a fertilizer.
8. What are fillers?
9. What do you mean by pigments? Give examples.
10. An example of straight fertilizer is _____.
(Fill in the blank)
11. What are drying agents?
12. Write one example of ecofriendly paint.
13. What is primary battery?
14. What do you mean by non-rechargeable batteries?

(3)

15. Mention one advantage of fuel cell.
16. Capacity of a battery is expressed in _____.
(Fill in the blank)
17. What is cast iron?
18. Bronze is an alloy of _____ and _____.
(Fill in the blanks)
19. What is carburizing of steel?
20. The purest form of iron is _____.
(Fill in the blank)

SECTION—B

Answer any *five* questions :

2×5=10

21. How are cements classified? Explain with example.
22. Explain setting of cement.
23. Write the important properties of ideal paint.

(4)

24. What are the role of macro- and micro-nutrients in fertilizer?
25. Why are thinners used in paints? Give one example of commonly used thinner.
26. What are the basic constituents of paints?
27. Mention battery components and their role.
28. What are the advantages of Li-ion batteries?
29. What are the specific properties of elements in alloys?
30. How is sulphur impurity removed from an alloy?

SECTION—C

Answer any *five* questions from the following :

5×5=25

31. (a) What are coloured glasses? How are they made? 2
- (b) Write the types of ceramics and their uses. 3

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(Continued)

(5)

32. (a) Mention the use of CNT in medicine. 2
- (b) Write short notes on : 3
- (i) Clay
- (ii) Feldspar
33. (a) What do you mean by straight, complex and mixed fertilizers? 3
- (b) What do you mean by 10-34-0 in a fertilizer packet? 1
- (c) What is amide fertilizer? Give example. 1
34. (a) Write a note on KCl as fertilizer. 2
- (b) Write the use of amide fertilizer. 1
- (c) What are superphosphate fertilizers? 2
35. (a) What do you mean by environment-friendly paint? 1
- (b) Why are additives used in paints? 1
- (c) What is anodizing? Explain. 1+2
36. (a) What are different types of metallic coatings? 2

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(Turn Over)

- (b) What do you mean by lake pigments? 1
- (c) What are the role of binders in paints? 1
- (d) What are the dyes used in paints? 1
37. What is lead-acid battery? Explain its working principle. 5
38. (a) Write a short note on solar cell. 2
- (b) Explain the working principle of fuel cell. 3
39. (a) Write a short note on manufacture of steel. 3
- (b) Differentiate between different types of steel. 2
40. (a) Discuss heat treatment of steel. 3
- (b) What are stainless steel? Mention its composition. Mention a few uses. 2

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