E 6353 (Pages : 2) Reg. No. 21050969

Name. Naif

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2019

Sixth Semester

Core Course—APPLIED INORGANIC CHEMISTRY

(Common for B.Sc. Chemistry Model I, B.Sc. Petrochemicals, B.Sc. Chemistry Environment and Water Management)

[2013 Admission onwards]

Time : Three Hours Maximum Marks : 60

Section A

Answer **all** *questions.*
Each question carries 1 *mark.*

1. Give one method for the preparation of polymeric sulphur nitride $(SN)_n$.
2. Mention the characteristic reactions of bromide ions.
3. Give two applications of carbon nanotubes.
4. Name two sulphide ores.
5. Mention two uses of carbides in industry.
6. Give an example of sulphur containing non-metallic superconductor.
7. Mention any two medical applications of Na^{24} and Co^{60}.
8. Draw the structure of B_4H_{10}.

(8 × 1 = 8)

Section B

Answer any **six** *questions.*
Each question carries 2 *marks.*

9. Explain the process calcination.
10. Define solubility product. Give one example.
11. Give one method of preparation and structure of IF_5.
12. Differentiate between Maddrell's salts and Kuroll's salts.
13. What is pyrex glass ?
14. Explain three centre-two electron bonds.

Turn over

15. Draw the structure of $XeOF_2$ and mention shape of the molecule.
16. Name two advantages and disadvantages of column chromatography.
17. Mention the important uses of nitrides.
18. What is silicone rubber ?

(6 × 2 = 12)

Section C

Answer any **four** *questions.*
Each question carries 4 *marks.*

19. Give short notes on rock dating and radio carbon dating.
20. What is an Ellingham diagram ? Give its applications.
21. Give a brief account on thin layer chromatography.
22. Write short notes on chemical vapour deposition and sol-gel methods for the synthesis of nanomaterials.
23. Discuss reactions in liquid SO_2 an solvent.
24. Write short note on intercalation compounds of alkali metals.

(4 × 4 = 16)

Section D

Answer any **two** *questions.*
Each question carries 12 *marks.*

25. Explain various steps involved in metallurgical processes.
26. Writes notes on principle and techniques involved in,
    (i) Ion-exchange chromatography.
    (ii) High performance liquid chromatography.
27. Discuss briefly about phosphorus based polymers.
28. Write brief notes on, (i) glass, (ii) Silicates, (iii) Zedites.

(2 × 12 = 24)