SAINTS COLLEGE LIBRARY TRIVANDRUM

(Pages : 3)

F – 4069

Reg. No. : .....

Name : .....

Third Semester B.Sc. Degree Examination, January 2019
First Degree Programme under CBCSS
CHEMISTRY
Core Course II
CH 1341 – Inorganic Chemistry II
(2017 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. **Each** question carries **one** mark. **(10×1=10 Marks)**

1. What is the bond order of O_2^- ion ?
2. Write an example for inter halogen compound.
3. Name the hydrogen bonding in o-nitro phenol.
4. What is the hybridisation of the central oxygen atom in water molecule ?
5. The shape of BeF_2 molecule is _____
6. The principle used in hydrogen bomb is _____
7. Nuclear fusion reactions are difficult to carry out on earth. Why ?
8. What are positrons ?
9. Glass is an _____ (amorphous/crystalline) solid.
10. What is the dipole moment of carbon tetra chloride ?

SECTION – B

Answer **any 8** questions. **Each** question carries **2** marks. **(8×2=16 Marks)**

11. Define lattice energy.
12. Give a brief account of nano scale.

P.T.O.

13. How will you prepare lithium aluminium hydride ? What are its uses ?
14. Write a note on boron nitrides.
15. Helium molecule does not exist. Why ?
16. What is mass defect ? How mass defect is related to binding energy ?
17. Explain the term critical mass in radioactivity.
18. Explain the sol-gel process for the preparation of nano particles.
19. Write a note on silicones.
20. Explain the important characteristics of inorganic polymers.
21. Write a note on glass transition temperature (Tg).
22. Why neutrons are considered to be effective projectiles ?

SECTION – C

Answer **any 6** questions. **Each** question carries **4** marks. **(6×4=24 Marks)**

23. Explain the structure of diborane.
24. What are zeolites ? Give the applications of zeolites.
25. Distinguish between sigma and pi bonds.
26. Explain the geometry of water molecule on the basis of hybridisation.
27. Write a note on the applications of radioisotopes.
28. Explain half-life period of a radioactive element.
29. Correlate N/P ratio and nuclear stability.
30. Write a note on Neutron Activation Analysis (NAA).
31. Explain the term stellar energy.

SECTION – D

Answer **any 2** questions. **Each** question carries **15** marks. **(2×15=30 Marks)**

32. a) What is meant by VSEPR theory ? List its various postulates.

    b) Represent the MO theory level diagram of oxygen molecule and explain its magnetic property.

    c) Define and explain dipole moment and its various applications.

33. a) Describe the following terms on the basis of free electron model of bonding in metals.

        1) Electrical conductivity of metals

        2) Metallic lustre

    b) Differentiate between intermolecular and intra molecular hydrogen bonding with examples.

34. a) How are the ages of archaeological carbonaceous materials and fossils are determined ?

    b) Distinguish between nuclear fission and nuclear fusion.

    c) Write notes on fissile and fertile isotopes.

35. a) Write a note on carbon nanotubes and fullerenes.

    b) Explain compounds of xenon and discuss the structure of xenon fluoride.

    c) What are pseudo halogens ?