16A

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2022
(Supplementary- 2018 Admission)
COMPLEMENTARY COURSE FOR PHYSICS, ZOOLOGY & BOTANY
ACHE1C01T: GENERAL CHEMISTRY

Time: 3 Hours   Maximum Marks: 64

SECTION A: Answer all questions. Each carries 1 mark.

1. The most electronegative element is ....

2. Be shows diagonal relationship with........................

3. The radius of sodium atom is ....than that of Na^+.

4. The ligand denticity of EDTA is ....

5. The state of hybridisation of Be in $BeCl_2$ is........................

6. The quantum numbers $n = 4$ and $l = 2$ correspond to .... subshell.

7. The shape of SF_6 molecule is ....

8. The radiant energy of sun is due to ....

9. The metal present in chlorophyll is ....

10. The haemoglobin molecule contains ....heme units.

(10 × 1 = 10 Marks)

SECTION B: Answer any 7 questions. Each carries 2 marks.

11. Define molarity of a solution.

12. Distinguish between accuracy and precision.

13. Mention two advantages of microanalysis.

14. What is meant by primary standard in volumetric analysis? Give an example.

15. What is meant by a covalent bond? Explain with an example.

16. Explain the term mass defect.

17. Distinguish between isotopes and isobars.

18. What is meant by critical mass?

19. Name two zinc containing enzymes.

20. Briefly explain the term photosynthesis.

(7 × 2 = 14 Marks)

(PTO)

SECTION C: Answer any 4 questions. Each carries 5 marks.

21. Explain the terms screening effects and effective nuclear charge.

22. Distinguish between electronegativity and electron affinity.

23. Compare the bond orders and stabilities of O_2, O_2^- and O_2^+.

24. What are the postulates of Bohr's atomic theory?

25. Explain 'sodium-potassium pump'.

26. What are the main functions of iron containing bio molecules?

(4 × 5 = 20 Marks)

SECTION D: Answer any 2 questions. Each carries 10 marks.

27. Explain with suitable examples (i) Lowry Bronsted theory and (ii) Lewis theory of acids and bases

28. Briefly outline the principles of solubility product and common ion effect in the separation of cations in qualitative analysis.

29. What are quantum numbers? Discuss the significance of each quantum number.

30. (i)Explain nuclear fission and fusion with suitable examples.

(ii) Discuss the application of radioisotopes as tracers.

(2 × 10 = 20 Marks)