D 73261 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(CBCSS—UG)

Chemistry

CHE 1C 01—GENERAL CHEMISTRY

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answers)

Answer questions up to 20 *marks.*
Each question carries 2 *marks.*

1. What is meant by a standard solution?
2. Calculate the momentum of a particle which has de Broglie wavelength of 2.5×10^{-10} m. [$h = 6.6 \times 10^{-34}$Js]
3. Define lattice energy of ionic compound. What does it indicate ?
4. State Hunds rule of maximum multiplicity
5. What are nuclear forces ? What are the different types ?
6. What are isotones ? Give an example.
7. Write nuclear equation for (i) emission of an α-particle from Th-232 ; (ii) emission of β-particle from Ra-228.
8. What are metalloenzymes ? Give an example.
9. What is the oxidation state and coordination number of Fe in haemoglobin ?
10. Name two zinc containing enzyme.
11. Explain hybridization and shape of ethylene.
12. Briefly explain the term photosynthesis.

(Ceiling of marks : 20)

Turn over

Section B (Short Answer)

Answer questions up to 30 *marks.*
Each question carries 5 *marks.*

13. Distinguish between accuracy and precision.

14. Discuss the principles of iodimetric and iodometric titrations.

15. Molecular nitrogen is diamagnetic while molecular oxygen is paramagnetic. Explain this on the basis of MOT.

16. Discuss the difference between sigma and pi bond.

17. Explain the difference between nuclear fission and nuclear fusion.

18. A wooden fossil shows ^{14}C activity which is 60% of the activity found in fresh piece of wood. Calculate the age of sample. Half life of ^{14}C = 5770 years.

19. Briefly outline the role of haemoglobin in transport of oxygen and carbondioxide.

(Ceiling of marks : 30)

Section C (Essay)

Answer any **one** *question.*
Each question carries 10 *marks.*

20. (a) Explain the action of diphenyl amine as a redox indicator.

    (b) Which indicator can be used for titration of (i) Oxalic acid Vs KOH ? (ii) Na_2CO_3 *Vs* H_2SO_4 ? Explain

21. What are the different types of hybridization involving *s*, *p* and *d* orbitals ? Explain and give one example for each.

(1 × 10 = 10 marks)