17U129 (Pages:2) Name: ……

Reg. No……..

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER-2017

(Regular/Supplementary/Improvement)

(CUCBCSS-UG)

CC15U CHE1 C01- GENERAL CHEMISTRY

(Chemistry - Complementary Course)

(2015 Admission onwards)

Time: Three Hours Maximum: 64 Marks

SECTION-A

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

1. The coordination number of Fe in Haemoglobin
2. The hybridisation of Iodine in $IF_7$is ……..
3. For a 3d orbital the value of *l* is…….
4. The product formed when $^{234}Th_{90}$ emits β particle…..
5. The conjugate base of HF is……..
6. The oxidation number of Cr in $Cr_2O_7^{2-}$ is……
7. N-Phenyl anthranalic acid is an example of ……indicator
8. A molecule is stable only if its bond order is …….
9. When a nuclide decays by β emission the N/P ratio is….
10. Example for a molecule which possesses trigonal bipyramidal structure is….

(10x1=10 marks)

SECTION-B

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

11. Calculate normality of aqueous solution containing 12.6 g of crystalline oxalic acid ($H_2C_2O_4$) in 500ml
12. What are iodomeric titrations?
13. Define standard solution with example?
14. Calculate uncertainty in the velocity of an electron if the uncertainty in its potion is 100 pm (mass of electron = 9.1×10^{-31} kg)
15. What is Born-Haber cycle?
16. What is an ionic bond, explain with an example?
17. What is meant by Hybridisation?
18. Distinguish between isotones and isobars
19. What are metalloenzymes?
20. Explain the process of Photosynthesis? **(7x2=14 marks)**

SECTION-C

Answer ***any four*** questions. Each question carries 5 marks.

21. Correlate N/P ratio and nuclear stability?
22. What are the postulates of VSEPR theory?
23. Define equivalent mass of an oxidising agent. Calculate the equivalent mass of $KMnO_4$ based on this concept?
24. Discuss the limitations of Bhor model, also explain uncertainty principle?
25. Discuss Ostwalds theory of acid base indicators
26. Explain Lowry-bronsted concept of acids and bases?

(4x5=20 Marks)

SECTION-D

Answer ***any two*** questions. Each question carries 10 marks.

27. a) Distinguish between the terms molarity and molality
    b) Discuss Arrhenius concept of acids and bases
    c) What mass of NaOH will be present in 500ml of its 0.5M solution?

(3+3+4 =10 Marks)

28. a) Explain the principle of radio carbon dating ?
    b) The amount of C-14 present in an old sample of wood is 1/6 th of that of a sample of new piece wood, Calculate the age of wood?
    (Half life of C-14 = 5668 years) **(5+5 =10 Marks)**
29. a) Explain sodium-potasium pump?
    b) Discuss functions of Haemoglobin and myoglobin?

(5+ 5 =10 Marks)

30. a) What are quantum numbers?
    b) What are applications of lattice energy measurements?

(5+5 = 10 Marks)

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