

B.Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2019SEMESTER – 6: **CHEMISTRY (COMPLEMENTARY COURSE FOR PHYSICS/BOTANY/ZOOLOGY)**COURSE: **15U1PCHE1: GENERAL CHEMISTRY***(Common for Improvement 2018/ Supplementary 2018/2017/2016 /2015 Admissions)*

Time: Three Hours

Max. Marks: 60

SECTION A*Answer **all** questions. Each question carry 1 mark*

1. What is the shape of p-orbital
2. Write n and l values of 3s orbital?
3. What is the value of ionic product of water at 298 K?
4. What is pH?
5. Define a curie
6. Write two examples for primary standard.
7. Define normality
8. State First law of thermodynamics.

(1 x 8 = 8)

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

9. State Hund's rule of maximum multiplicity.
10. Write the electronic configuration of atoms with atomic number 24 and 30.
11. State Heisenbergs uncertainty principle.
12. What is meant by buffer solutions?
13. How solubility of barium sulphate is related to its solubility product?
14. What is binding energy? How is it related to stability of atom?
15. Explain second law of thermodynamics with entropy and gibbs energy
16. Calculate the normality of 10 % solution of NaOH.

(2 x 6 = 12)

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

17. Distinguish between accuracy and precision? Give examples.
18. Explain laws of photoelectric effect
19. What are the components of a nuclear reactor?
20. Compare nuclear fission and nuclear fusion
21. What are the characteristics of a primary standard?
22. Explain principle behind Acid-base titrations

(5 x 4 = 20)

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

23. Explain four quantum numbers, their allowed values and significances
24. Explain the effect of temperature on spontaneity of reactions based on second law of thermodynamics.
25. Explain different type of errors in quantitative analysis
26. Explain carbon dating and its applications

(10 x 2 = 20)