(NO. OF PAGES: 2)

(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2023 ONLY)

SUB CODE 23UCY304

REG.NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : NOV-2024

B.Sc., CHEMISTRY **MAXIMUM MARKS: 75**

SEMESTER-III **TIME : 3 HOURS**

PART - III

23UCY304- CC III : INORGANIC AND PHYSICAL CHEMISTRY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.(K1)

1. Van-Arkel method is used to purify

a) Au b) Ti c) Co d) Ca

2. Which of the following is a domestic fuel?

a) Producer gas b) Natural gas c) LPG d) Water gas

3. For an ideal gas , the fugacity is equal to pressure and _____

(a) f/p =1 (b) f/p=0 (c) f/p varies (d) f/p> 1

4.Number of triple points at water system is

a)1 b)2 c)3 d) 4

5. Which of the following is a colligative property?

a) Relative lowering of fluid pressure b) Decrease in boiling point

c) Decrease in freezing point d) Change in volume after mixing

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6.What are alloys?

7. What are primary nutrients ?

8. Define chemical potential.

9. What are components?

10. Define Eleration of boiling point.

SECTION – B (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K3)

11. a) Illustrate and explain zone refining process of purification of metals.

(OR)

b) Discuss the preparation and uses of $TiCl_4$

12. a) Explain the composition and uses of natural gas.

(OR)

b) Write a note on primary and secondary nutrients.

(CONTD …. 2)

13. a) Define fugacity and give its significance.

(OR)

b) Discuss the De Donder's concept of chemical equlibria.

14. a)Derive Gibbs phase rule.

(OR)

b) Elaborate the Pb-Ag system and its importance.

15. a) Determine lowering of vapour pressure by dynamic method.

(OR)

b) Explain the calculation of molecular weight by depression in the freezing point.

SECTION – C (5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4/ K5)

16. a)Summarize the methods used to Concentrate of ores.

(OR)

b) Write the preparation properties and uses of Ni alloys.

17. a) Explain the process of refining petroleum and mention the uses of various fractions.

(OR)

b) Discuss the manufacturing of urea and calcium ammonium nitrate. Give their uses.

18. a) Explain the variation of chemical potential with temperature and pressure.

(OR)

b) Deduce the relationship between Kp and Kc.

19. a) Explain the phase equlibria of potassium iodide water system and give its importance

(OR)

b) Discuss the phase equilibria of sulphur system with neat sketch.

20. a) Elaborate the Berkley and Hartley method of determination of osmatic pressure.

(OR)

b)Discuss the method of determination of elevation of boiling point by Cottrells method.

****