...iges) **Reg. No. :** .....

...ode No. : 30626 E **Sub. Code : CACH 21**

... (CBCS) DEGREE EXAMINATION, APRIL 2022.

Second Semester

Chemistry — Allied

ALLIED CHEMISTRY – II

(For those who joined in July 2021 onwards)

...me : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Which of the following ligands is bidentate?

a) EDTA (b) Ethylenediamine

c) Acetato (d) Pyridine

The IUPAC name of $Na_3[Fe(C_2O_4)_3$ is

a) Sodium trioxalatoferrate (III)

b) Sodium trioxalatoiron (III)

c) Sodium tris (oxalate) ferrate (III)

d) Sodium tris (oxalate) iron (III)

3. sp^3 hybridisation leads to which shape of the molecule

(a) Tetrahedron (b) Octahedron

(c) Linear (d) Plane triangle

4. The sufficient condition for optical activity is

(a) absence of chiral centre

(b) presence of chiral centre

(c) absence of symmetry

(d) presence of symmetry

5. Kohlraush's law can be used to determine

(a) λ_α for weak electrolytes

(b) absolute ionic mobilities

(c) solubility of sparingly soluble salts

(d) all of these

6. The electrical work done by the galvanic cells is given by the expression

(a) $W_{max} = -nFE$ (b) $\Delta G = -nFE$

(c) $-\Delta G = W_{max}$ (d) all of the above

7. Which one of the following is aldohexose?

(a) glucose (b) fructose

(c) ribose (d) surcrose

Amino acids are the building blocks of

a) carbohydrates (b) vitamins

c) proteins (d) fats

Sulpha drugs are used for

a) Precipitating bacteria

b) Stopping the growth of bacteria

c) Decreasing the size of bacteria

d) Removing bacteria

Which of the following is an antimalarial drug?

a) Insulin

b) Penicillin

c) Aspirin

d) Chloroquine

PART B — (5 × 5 = 25 marks)

...swer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

a) On the basis of Pauling's theory, explain the structure and magnetic properties of $K_4[Fe(CN)_6]$

Or

b) State and explain effective atomic number concept. Give examples.

12. (a) Write short notes on Resonance effect with examples.

Or

(b) What is meant by resolution? Describe two methods for resolving racemic mixture.

13. (a) State and explain Ostwald dilution law.

Or

(b) What are conductometric titration? Explain the following type of titrations curves

(i) HCl is titrated against NaOH

(ii) CH_3COOH is titrated against NH_4OH

14. (a) How are carbohydrates classified? Give an example for each.

Or

(b) Describe the preparation and properties of amino acids.

15. (a) Write briefly about Diabetes, causes and prevention.

Or

(b) Write a note on (i) Analgesics (ii) antipyretics

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) How does Werner's coordination theory explain the formation of complex compounds?

Or

(b) Write short notes on biological role of haemoglobin and chlorophyll.

17. (a) Explain briefly the geometry of methane and ethylene molecules.

Or

(b) (i) Write a note on element of symmetry with suitable examples.

(ii) Discuss the optical activity of tartaric acid.

18. (a) What is a glass electrode? Describe how the pH of a solution is determined using a glass electrode.

Or

(b) Explain the potentiometric titration between acid-base and Redox titration.

19. (a) Explain the preparation and properties of glucose.

Or

(b) Write a note on primary and secondary structure of proteins.

20. (a) Write briefly about airborne diseases and waterborne diseases.

Or

(b) Name any three important Indian medicinal plants and discuss the uses of each of one of them.

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