20PHU10

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Third Semester)

Branch – **PHYSICS**

CHEMISTRY – I

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. The shapes of XeF_6 is
   (i)Distorted octahedral (ii)Tetrahedral
   (iii)Octahedral (iv)Planar

2. A terpenoid used in the manufacture of celluloid and also as a mot repellent is
   (i) menthol (ii) zingiberene
   (iii) camphor (iv) α-pinene

3 What is the coordination number of a body-centered unit cell?
   (i) 6 (ii) 12
   (iii) 8 (iv) 4

4. Unit of the rate constant depends on
   (i) order of reaction (ii) molecularity of the reaction
   (iii) concentration (iv) number of reactant

5. Photochemical reaction rate depends on
   (i) temperature (ii) intensity of light
   (iii) time (iv) None of these

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a. Explain the types of chelates.

OR

b. Discuss the preparation and properties of sodium hydrosulphite.

7 a. Explain the classification of dyes based on applications.

OR

b. Explain the preparation and properties of polyester.

Cont...

8. a. Discuss the center of symmetry.

OR

b. Explain the Miller indices.

9. a. Explain the difference between order and molecularity.

OR

b. Describe the types of colloids.

10 a. Explain the characteristics of catalytic reaction.

OR

b. State Stark Einstein law and Define quantum yield.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a. Explain the Werner's theory of coordination complex.

OR

b. Discuss the preparation, properties and uses of BrF_3.

12. a. Explain the isolation and uses of menthol.

OR

b. Describe the preparation, properties and uses of PVC.

13 a. Explain the nature of unit cell of NaCl.

OR

b. Describe the structure of diamond.

14 a. Derive an expression for the rate constant of a second order reaction.

OR

b. Explain the determining order of a reaction by Graphical method.

15 a. Discuss the mechanism of enzyme catalysis.

OR

b. Explain the primary and secondary photochemical processes.

Z-Z-Z END