

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS). -----
BSc DEGREE EXAMINATION DECEMBER 2019
(Third Semester)
Branch-PHYSICS
CHEMISTRY -1

Time: Three Hours

Maximum: 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10x2 = 20)

- 1 Calculate-effective atomic number of $K_4[Fe(CN)_6]$.
- 2 Mention any two uses of BrF_3 .
- 3 What are alkaloids? Give an example.
- 4 What are basic dyes? Give an example.
- 5 Define symmetry elements.
- 6 Give any one example of BCC and FCC crystals.
- 7 Illustrate : Inversion of cane sugar.
- 8 Derive an expression for the half life period of second order reaction.
- 9 Give any two non-conventional sources of energy.
- 10 State the photovoltaic effect.

SECTION - B (25 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5x 5 = 25)

- 11 a Predict the shapes of XeF_2 and XeF_4 using VSEPR theory.
OR
b State and explain Werner's theory of coordination compounds.
- 12 a Explain the isolation of citral and nicotine. »
OR
b Describe the preparation and uses of PVC and Polyester.
- 13 a Briefly explain about Weiss and Miller indices.
OR
b Give an account of : (i) Isomorphism (ii) Polymorphism.
- 14 a Discuss about the hydrolysis of ethyl acetate.
OR
b Discuss any one methods of determining the order of a reaction.
- 15 a What are semiconductors? How are they classified?
" Y OR ■ YYY:YY,:YY'
b Explain the thermal pollution and its effects.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks

(3 x 10 = 30)

- 16 a Describe the preparation, properties and uses of IF_7 . (5)
- b What are chelates? Give the (5)
- 17 a Explain the isolation and uses of piperine. (5)
- b Discuss shortly about bio degradable polymers. (5)
- 18 Explain the nature of unit cells of NaCl, diamond and graphite. (4+3+3)
- 19 a Derive an expression for the rate constant of first order reaction. (5)
- b Write short notes on compel thermal reactions. (5)
- 20 a Explain the radioactive pollution and its effects. (5)
- b Give an account on silicon solar cell. (5)