PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2017
(Third Semester)

Branch - BOTANY

CHEMISTRY -1

Time : Three Hours   Maximum : 75 Marks

SECTION-A (20 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (1 0 x 2 - 2 0) *

1   Distinguish orbital from orbit.

2   State Hund's rule.   .

3   Give any two substitution reactions of benzene.

4   Name any two cellulose derivatives and mention their use.

5   What are tranquilizers?

6   List any two characteristics of a Dye.

7   Give any two examples of parallel reactions.

8   Write down any two important criteria of a catalyst.

9   Mention any four implications of enhanced greenhouse effect.

10   What is meant by soil pollution?   .

SECTION - B (25 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks (5 x 5 = 25)

11 a Find the oxidation number of carbon in each of the following:
       CH_4, CH_3CL, CH_2CL_2, $CHCL_3$ and CCL_4.
                    OR
    b In the given reactions, indicate the following : Oxidation, reduction,
       oxidizing agent and reducing agent
       (i) $2FeCl_3 + SnCl_2$ ------- » $2FeCl_2 + SnCl_4$ and
       (ii) $3 Fe + 4H_2O$ ----------> $FeO_4 + 4H_2$.

12 a State isoprene rule and outline the isolation procedure of citral.
                    OR
    b Give a brief note on starch.   '   -   '

13 a Explain the following terms: Antipyretics and antibiotics.
                    OR
    b • Give a classification of dyes based on chemical constitution.

14 a Order and molecularity of a reaction may not be the same. Explain.
                    OR
    b Explain the mechanism of enzyme-catalysed reactions.

15 a Explain the various parameters used to ascertain the quality of water.
                    OR
    b Write a short note Eutrophication.

SECTION - C (30 Marks)
Answer any THREE Questions
ALL Questions Carry EQUAL Marks (3 x 10 = 30)

16 a . Using VSEPR theory, predict the shapes of BF_3 and IF_6.   (6)

   b   Write notes on (i) Aufbau principle and (ii) Pauli exclusion principle. (4)

17 a   State and explain the main points of Huckel's rule.   (4)

   b   Give a comprehensive account on alkaloids.   (6)

18a Write a brief on the following: Sulphonamides, anesthetics
     and disfectants.   *   '   (6)

   b   Explain the theory of colour and constitution of dyes.   (4)

19 a   Derive an expression of rate constant for the first order reaction.   (6)

   b   Explain the action of catalytic promoters and inhibitors.   (4)

20 a Discuss the various steps involved in water treatment process. . (6)

   b   What is acid rain? Mention its causes.   (4)

Z-Z-Z   END