PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2019
(Third Semester)

Branch- **ZOOLOGY**

CHEMISTRY -1

Time: Three Hours   Maximum: 75 Marks

SECTION-A (IQ Marks!
Answer **ALL** questions
ALL questions carry **EQUAL** marks   (10 x 1 = 10)

1   The number of orbital in a p sub-shell is
(i)   1   (ii) 2
(iii)   3   (iv) 6

2   Which of the following can act as a Lewis base?
0) Ag^+ (ii) AlClj
(iii) C_2H_5OH (iv) BCl_3

3   Huckel rule of aromaticity is
(i)   4n   (ii) 4n+2
(iii) 4n+4   (iv) n+2

4   Which one is a tropane alkaloid
(i)   Piperine   (ii) Nicotine
(iii) Atropine   (iv) Quinine

Solid organic compounds are purified by
(i) Fractional crystallization   (}i) sublimation
(iii) crystallization   (iv) All of these

Which method can be used to ascertain the purity of an organic compound?
(i) Refractive index   (ii) Chromatography
(iii) Melting point   (iv) Boiling point

The reactants and catalyst form a single phase is
(i) Homogeneous catalyst   (ii) Heterogeneous catalyst
(iii) Two phase   (iv) Two component

The unit of rate constant for first order reaction is
(i)   S-   (ii) mol
(iii) mol*1   (iv) $dm^3 mol'^1 S'^1$

Hot water discharged from different industries causes__
(i)   Thermal pollution   (ii) soil pollution
(iii)   air pollution   (iv) water pollution

10   Highest percentage of air consists of_____ .
(i)   Oxygen   (ii) Nitrogen
(iii)   Argon   (iv) Carbondioxide

SECTION - B (25 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks   (5x5 = 25)

11 a Discuss the Hund's rule of maximum multiplicity with examples.

12 a State Huckel's Rule of aromaticity with examples.

OR

b Write the preparation and uses of Teflon, polycarbonates.

13 a Explain - Sublimation method.

OR

b Define the terms with units i) Normality ii) Molarity

14 a What are the characteristics of catalytic reaction?

OR

b Derive the rate constant for first order reaction.

15 a Discuss the different kinds of pollution and pollutants.

OR

b What are the different factors affecting air pollution.

SECTION -C (40 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks   (5 x 8 - 40)

16 a i) State Aufbau principle with example.
ii)   What is an orbital?
iii) Describe the shapes of s, p and d orbitals.   (3+2+3)

OR

b Explain the relative acidity and basicity of acid and base with solvents.

17 a Write the preparation and uses of i) Teflon ii)Terylene iii) Polyethylene.

OR

b State - Isoprene rule. Explain the isolation and uses of Geranial.

18a Discuss the principle, procedure and application of steam distillation method.

OR

b Describe Column Chromatography.

19 a What are enzyme catalysis? Explain the mechanism of enzyme catalysis.

OR

b Write a note on complex reactions.

20 a Discuss the primary and secondary treatment of water.

OR

b Discuss about the contamination of food with toxic chemicals.

z-z-z   END