

(6 pages)

S.No. 15884 T D

SYE 1

(For candidates admitted from 2000-2004 Batch)

B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

Part III — Allied

CHEMISTRY – I (INORGANIC, ORGANIC &  
PHYSICAL CHEMISTRY – I)

Time : Three hours

Maximum : 100 marks

SECTION A — (10 × 2 = 20)

Answer ALL the questions

1.

How will you calculate the bond order of N<sub>2</sub> Molecule?

2.

What is meant by producer gas?

3.

Define : hyperconjugation.

4.

Mention the major disadvantage of D.D.T.

5.

Define : Antibiotics.

6.

Write the structural formula of Sulpha thiazole and Sulpha diazine.

7.

Define : Unit cell

8.

State Phase rule.

9.

What is meant by Catalysis?

10.

Mention the various types of Catalysis.

SECTION B — (5 × 6 = 30)

Answer ALL the questions choosing either (a) or (b)

11.

a) Explain the molecular orbital theory basic concepts.

Or

b) Give a brief account on Air Pollution.

12.

a) Explain Inductive effect with example.

Or

b) Discuss the preparation properties and uses of Chloro Fluoro Carbon(CFC)

13.

a) Give a brief account on the following name reactions.

(ii) Cannizaro Reaction

(ii) Haloform reaction.

Or

b) Discuss the mechanism of nitration and Halogenation.

14.

- a) Draw and explain the phase diagram of one component System.

Or

- b) What is meant by efficiency of a Heat.

15.

- a) Give a brief account on Activation energy.

Or

- b) Explain the effect on the Temperature on reaction rate.

SECTION C — (5 × 10 = 50)

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

16.

- a) (i) Describe the formation, Bond order and Magnetic properties of  $N_2$  and  $He_2$  molecules with the help of M.O theory.
- (ii) Give a brief account on water pollution.

Or

- b) (i) Give a brief account on the manufacture of Soap and Detergents.

17

- a) (i) What is meant by resonance? Explain.
- (ii) Discuss the conditions and various effects of resonance.

Or

- b) Explain the preparations, properties and uses of B.H.C and D.D.T.

18.

- a) Describe any four chemical properties of naphthalene with equations.

Or

- b) Explain the structural elucidation of Naphthalene.

19.

- a) Elaborate the four steps involved in Carnot Cycle with diagram.

Or

- b) (i) Describe the Lead –Silver System.  
(ii) Give a brief account on Thermodynamic scale of temperature. (4)

20.

- a) Describe the various types of Catalysts with example.

Or

- b) Explain the determination of reaction rate by the following methods.
- (i) Addition of Excess of reactant.
  - (ii) Hit and trial method.
  - (iii) Half change time method.
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