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BSCcheCC1010

Seat No : _____

B.Sc. Semester - 1 (CBCS) Examination
Feb/Mar. -2021 (NEW COURSE)
CHEMISTRY (CORE)

Time: 1:30 Hours

Marks: 42

Instructions:

1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

Q.1(A) Answer the following question. (04)

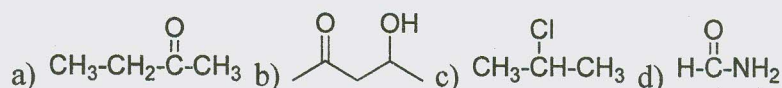
- (1) Explain metallic character of S and P block elements.

Q.1(B) Answer any two questions out of three. (10)

- (1) What is ionic radius? Discuss Pauling method for determination of ionic radius.
- (2) Draw MOT diagram of N₂ molecule and calculate its bond order, bond length, HOMO & LUMO orbitals and Magnetic property.
- (3) Explain Valence bond theory

Q.2(A) Answer the following question. (04)

- (1) Give IUPAC name of the following:



Q.2(B) Answer any two questions out of three. (10)

- (1) Explain Relative strength of carboxylic acid.
- (2) Explain Markovnikoff's and Anti-markonikoff's rule with suitable example.
- (3) Discuss E₁ Vs E₂ reaction.

Q.3(A) Answer the following question. (04)

- (1) Explain factor affecting adsorption with its characteristic.

Q.3(B) Answer any two questions out of three. (10)

- (1) Derive equation of rate constant for second order reaction (When concentration is same).
- (2) Explain Collision theory of reaction rate.
- (3) What is heterogeneous catalysis? Discuss the theories of heterogeneous catalysis with examples.

Q.4(A) Answer the following question. (04)

- a) Discuss types of Organic reactions.
- b) Give difference between Inductive and mesomeric effect.

Q.4(B) Answer any two questions out of three. (10)

- (1) What is Diagonal relationship? Discuss diagonal relationship of Li with Mg.
- (2) What are reactive Intermediates? Give name of each and discuss carbocation in detail.
- (3) Describe the methods for determination of order of reaction.

Q.5(A) Answer the following question. (04)

- (1) State difference between molecularity and Order of reaction.

Q.5(B) Answer any two questions out of three. (10)

- (1) Explain sp³d² hybridization with example.
- (2) Discuss in detail SN² Vs SN¹ reactions.
- (3) Explain Freundlich adsorption isotherm and its limitation.