647510 **BSCorgCC5020** **Seat No :_____**

B.Sc. Semester - 5 (Remedial) (*CBCS*) Examination
March/April-2024 (Old Course)
ORGANIC CHEMISTRY AND SPECTROSCOPY (CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que-1(A) Answer the following question. (04)

(1) Explain monosaccharides, oligosaccharides and polysaccharides.

Que-1(B) Answer the following questions. (Any two) (10)

(1) Explain methylation method to prove the Pyranose structure of glucose.

(2) Give reactions which proves presence of 5-OH, CO(carbonyl) group and linear chain of six carbons in glucose.

(3) Write reaction and mechanism for the formation of osazone from glucose and fructose with mechanism.

Que-2(A) Answer the following question. (04)

(1) What is symmetry and symmetry element? Write name and symbols of all the symmetry elements

Que-2(B) Answer the following questions. (Any two) (10)

(1) Construct multiplication table for C_2v point group.

(2) Write difference between σh, σ_V and σd.

(3) Write difference between Cn and Sn.

Que-3(A) Answer the following question. (04)

(1) Give Synthesis and uses of p-Anisyl urea.

Que-3(B) Answer the following questions. (Any two) (10)

(1) Draw constitution and resonance structures of Pyrole, Furan, Thiophen.

(2) Discuss electrophilic substitution reactions of Furan, Thiophene and pyrole.

(3) Discuss the basicity of Alkyl amines, pyrole and pyridine.

Que-4(A) Answer the following question. (04)

(1) Explain fundamental vibrations in IR.

Que-4(B) Answer the following questions. (Any two) (10)

(1) Explain curtius rearrangement.

(2) Write a note on applications of IR.

(3) Explain factors affecting IR spectra of carbonyl group.

Que-5(A) Answer the following question. (04)

(1) Write a note on types of electronic transition in UV.

Que-5(B) Answer the following questions. (Any two) (10)

(1) Write a note on applications of UV spectroscopy.

(2) Write chemical methods used for the determination of -OH and -COOH functional group in alkaloid.

(3) Write note on Hofmann exhaustive methylation method used for the degradation of alkaloids

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