



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester-5) Internal Examination Sept.- 2025
US05MAICV01 – ORGANIC CHEMISTRY

Date: 22-09-2025, Monday

Time: 10:45 AM to 12:15 PM

Total marks: 30

Q-1 Write the answer of following multiple-choice questions. (All are compulsory) [6]

- Electrophilic substitution in pyridine occurs at...
(a) Position-1 (c) Position-4
(b) Position-3 (d) Position-2
- Which of the following is a heterocyclic compound?
(a) Benzene (c) Pyridine
(b) Cyclohexane (d) Toluene
- Sulphonation of naphthalene at low temperature gives mainly...
(a) 1-naphthalenesulfonic acid (c) 3-naphthalenesulfonic acid
(b) 2-naphthalenesulfonic acid (d) 5-naphthalenesulfonic acid
- Which one is a mild reducing agent?
(a) Ozone (c) N-bromosuccinimide
(b) HCl (d) Sodium borohydride
- UV-Vis spectroscopy is primarily used to study which type of transitions?
(a) Vibrational transitions (c) Electronic transitions
(b) Rotational transitions (d) Nuclear transitions
- How many ^1H NMR signals does $\text{CH}_3\text{CH}_2\text{Br}$ show?
(a) 1 (c) 3
(b) 2 (d) 5

Q-2 Write synthesis and electrophilic substitution reaction in Pyrrole. [6]

OR

Q-2 Discuss about electrophilic substitution reaction in Pyridine. [6]

Q-3 Write a note on electrophilic aromatic substitution reactions in naphthalene. [6]

OR

Q-3 Write synthesis of α -Naphthol and β -Naphthol. [6]

Q-4 Write a note on 'Pinacol-Pinacolone rearrangement'. [6]

OR

Q-4 Write note on ' LiAlH_4 ' as a reagent. [6]

Q-5 Write a note on principle and instrumentation of UV spectroscopy. [6]

OR

Q-5 Write a note on main parts of NMR spectrometer. [6]

No of printed pages: 01

Supervisor sign

Seat No.:



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B.Sc. Industrial Chemistry Vocational (Semester - 5) Quiz September- 2025

US05MAICV01 – ORGANIC CHEMISTRY

Date: 22-09-2025, Monday

Time: Maximum 20 minutes

Total marks :15

Q-1 Fill in the blanks with the appropriate answer given in the bracket. [08 Marks]

1. In pyrrole, electrophilic aromatic substitution reactions usually occur at the on the ring. **(3-position/2-position)**
2. Pyrrole is an organic compound with a five-membered ring that contains one atom and four carbon atoms. **(Oxygen/Nitrogen)**
3. The simplest polynuclear aromatic hydrocarbon is **(Naphthalene/Anthracene)**
4. In Friedel-Crafts acylation of naphthalene, the acyl group enters at **(1-position/ 3-position)**
5. is commonly used for the reduction of aldehydes and ketones to alcohols. **(CrO₃ / LiAlH₄)**
6. N-Bromosuccinimide is commonly used for selective reactions. **(Bromination / Reduction)**
7. functional groups show a sharp absorption near 1700 cm⁻¹ in IR spectroscopy. **(Carbonyl [C=O] / Amine [-NH₂])**
8. ¹H NMR spectrum for pure ethanol (CH₃CH₂OH) shows signals. **(three/two)**

Q-2 State whether the following statement is true or false. [07 Marks]

(Write your answer in the box)

True/False

- | | |
|--|-----------|
| 1. Pyridine is five-membered aromatic heterocyclic compounds. | [] |
| 2. 1-nitronaphthalene is the major product when naphthalene undergoes nitration. | [] |
| 3. Halogenation of naphthalene primarily yields the α-halonaphthalene. | [] |
| 4. The reaction converting oximes into amides under acidic conditions is called Beckmann rearrangement. | [] |
| 5. The reduction of benzaldehyde to benzyl alcohol can be achieved by KMnO ₄ . | [] |
| 6. UV-Visible spectroscopy is mainly used to study nuclear spin transitions. | [] |
| 7. The reference compound commonly used in ¹ H NMR to calibrate chemical shifts is Tetramethylsilane (TMS). | [] |
