Date 10.04.2026

Notice

M.Sc. IV Sem. [(Organic Chemistry) (Home Assignment)]

Note- Write down home assignment on one topic for each paper. The topics for each paper are as follows-

Paper	Topics
I	Discuss the principle of ^{1}H-NMR spectroscopy.
	Discuss the principle of ESR spectroscopy.
II	Elucidate the mechanism of Barton reaction and photolysis of saturated cyclic ketones.
	Write down the difference between haem and non-haem proteins. Explain the mechanism of transport and storage of oxygen in mammals.
III	Discuss the mechanism of the following reactions- I. Swern oxidation II. Davis oxidation
	Discuss the mechanisms of Julia and Peterson olefination reaction.
IV	With suitable reactions establish that maltose contains 1,4-glycosidic linkage
	What are sulpha drugs? What is their mode of action? Give the synthesis of any three sulpha drugs.

Submit the home assignment by 20.04.2026 in the office of chemistry department.

(Prof. J. P. Pandey)
Principal

(Prof. M. Ansari)
HOD, Chemistry

Date 10.04.2026

Notice

M.Sc. IV Sem. [(Inorganic Chemistry) (Home Assignment)]

Note- Write down home assignment on one topic for each paper. The topics are as follows-

Paper	Topics
I	Discuss the principle of ^{1}H-NMR spectroscopy.
	Discuss the principle of ESR spectroscopy.
II	Elucidate the mechanism of Barton reaction and photolysis of saturated cyclic ketones.
	Write down the difference between haem and non-haem proteins. Explain the mechanism of transport and storage of oxygen in mammals.
III	What are sandwich compounds? Draw the qualitative molecular energy level diagram for ferrocene.
	Discuss the fluxional behaviour in η^{1}-dienyl complexes.
IV	Discuss the zinc metalloenzymes.
	Discuss the followings- I. Ferritin II. Transferrin

Submit the home assignment by 20.04.2026 in the office of chemistry department.

(Prof. J. P. Pandey)
Principal

(Prof. M. Ansari)
HOD, Chemistry

Date 10.04.2026

Notice

M.Sc. IV Sem. [(Physical Chemistry) (Home Assignment)]

Note- Write down home assignment on one topic for each paper. The topics for each paper are as follows-

Paper	Topics
I	Discuss the principle of ^{1}H-NMR spectroscopy.
	Discuss the principle of ESR spectroscopy.
II	Elucidate the mechanism of Barton reaction and photolysis of saturated cyclic ketones.
	Write down the difference between haem and non-haem proteins. Explain the mechanism of transport and storage of oxygen in mammals.
III	Discuss the various theories of Unimolecular reactions.
	Describe the thermodynamics of Schottky and Frankel defects.
IV	Derive various thermodynamic properties of ideal gases from partition functions.
	Compare Fermi-Dirac and Bose-Einstein statistics.

Submit the home assignment by 20.04.2026 in the office of chemistry department.

(Prof. J. P. Pandey)
Principal

(Prof. M. Ansari)
HOD, Chemistry

Date 10.04.2026

Notice

M.Sc. II Sem. Chemistry (Home Assignment)

Note- Write down home assignment on one topic for each paper. The topics are as follows-

Paper	Topics
I	Discuss thermogravimetric analysis technique.
	Discuss the principle and instrumentation of gas chromatography.
II	Find out the energy and wave function for hydrogen atom.
	Derive Laplace equation and discuss its applications.
III	Discuss Fischer and Schrock carbenes in details.
	Discuss stereoisomerism in M(abcdef) in details.
IV	Discuss optical activity of biphenyl and allenes.
	What is asymmetric synthesis? Also discuss the role chiral auxillary.

Submit the home assignment by 20.04.2026 in the office of chemistry department.

(Prof. J. P. Pandey)

Principal

(Prof. M. Ansari)

HOD, Chemistry

Date 10.04.2026

Notice

B.Sc. VI Sem. Paper II Chemistry (Home Assignment)]

Note- Write down home assignment on any one of the following topics-

Topics
Discuss Rault's Law.
Discuss first law of thermodynamics and its applications.

Submit the home assignment by 20.04.2026 in the office of chemistry department.

(Prof. J. P. Pandey)
Principal

(Prof. M. Ansari)
HOD, Chemistry

Date 10.04.2026

Notice

B.Sc. VI Sem. Paper I Chemistry (Home Assignment)]

Note- Write down home assignment on any one of the following topics-

Topics
Explain aldol and benzoin condensation with their mechanisms
Write short notes on the following- I. DDQ II. m-CBA III. Wilkinson's catalyst

Submit the home assignment by 20.04.2026 in the office of chemistry department.

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Principal

(Prof. M. Ansari)
HOD, Chemistry

Date 10.04.2026

Notice

B.Sc. IV Sem. Chemistry (Home Assignment)]

Note- Write down home assignment on any one of the following topics-

Topics
Derive the Schrodinger wave equation and give the postulates of quantum mechanics.
(a) Discuss the effect of conjugation on the value of λmax. (b) Discuss chemical shift with respect to NMR spectroscopy. (c) Differentiate between intermolecular and intramolecular hydrogen bonding on the basis of IR spectroscopy.

Submit the home assignment by 20.04.2026 in the office of chemistry department.

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Principal

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HOD, Chemistry

Date 10.04.2026

Notice

B.Sc. II Sem. Chemistry (Home Assignment)]

Note- Write down home assignment on any one of the following topics-

Topics
Discuss the anomalous behaviour of beryllium. Also give methods of preparation, reactions and structure of beryllium hydride.
Discuss the following reactions: i. Hydroboration-Oxidation reaction. ii. Ozonolysis of alkene.

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