

BARKATULLAH UNIVERSITY BHOPAL

ASSIGNMENT –OPEN BOOK SYSTEM

DECEMBER -2020

M.Sc.I SEMESTER (ATKT)

PAPER –INORGANIC CHEMISTRY

PAPER CODE –MCH-401

NOTE:- All questions are compulsory and carry equal marks . Max.M.-85

Q.1 Explain **YSEPR** theory with examples.

Q.2 Explain the energy profile of a reaction .

Q.3 Write short note **on:-**

1. The trans effect

2. Redox reaction

Q.4 What is crystal field stabilization energy explain with example.

Q.5 Write an essay on HSAB Concept of Pearson .give its application and limitation.

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PAPER- ORGANIC CHEMISTRY II

PAPER CODE –MCH-402

NOTE:- All question are compulsory and carry equal marks . Max.M.-85

- Q.1 Explain Huckels Rule.
- Q.2 Write a detailed note on Tautomerism
- Q.3 Describe the different methods used for the determination of reaction mechanism.
- Q.4 What is conformational Analysis ?give its importance in organic chemistry with example.
- Q.5 Write short notes on the following (any two)
1. Regioselectivity
 2. Neighboring group participation
 3. Classical and non classical carbocations.

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M.Sc.I SEMESTER (ATKT)

PAPER- PHYSICAL CHEMISTRY III

PAPER CODE –MCH-403

NOTE:- All question are compulsory and carry equal marks . Max.M.-85

- Q.1 EXPLAIN SCHRODINGER EQVASTION FOR HYDROGEN ATOM.
- Q.2 EXPLAIN THE VARIATION PRINCIPAL FOR HELIUM ATOM.
- Q.3 DESCRIBE ADDITIONAL EFFECT AND SPIN OF ANGULAR MOMENT.
- Q.4 EXPLAIN THE PHASE RULE FOR THREE COMPONENT SYSTEM.
- Q.5 EXPLAIN THE BOSE- EINSTEIN STATISTICS ON THE BASISOF DISTRIBUTION LAW.

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PAPER- GROUP THEORY & SPECTROSCOPY IV

PAPER CODE –MCH-404

NOTE:- All question are compulsory and carry equal marks . Max.M.-85

- Q. 1 write a note on stark effect .
- Q.2 Explain Raman effect .
- Q.3 Write a note on CARS .
- Q.4 Derive an expression for energy of Harmonic oscillator.
- Q.5 Write short note on the following :- (any two)
1. Frank-condon principal
 2. Koopmannis theorem
 3. Spectra of Transition metal complex .

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M.Sc.I SEMESTER (ATKT)

PAPER- BIOLOGY FOR CHEMIST -V

PAPER CODE –MCH-405(b)-

NOTE:- All question are compulsory and carry equal marks . Max.M.-85

- Q. 1 Differentiate between plant cell and animal cell.
- Q.2 Explain in brief , glycosides and glycolipids .
- Q.3 Define fatty acids .Explain lipid metabolism of fatty acids .
- Q.4 what are protein ? Describe secondary structure of protein .
- Q.5 What are Nucleic acids ? Explain purine and pyrimidine base of nucleic acids.

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M.Sc.I SEMESTER (ATKT)

PAPER- MATH FOR CHEMIST -V

PAPER CODE –MCH-405(a)-

NOTE:- All question are compulsory and carry equal marks . Max.M.-85

- Q. 1 Explain inverse and adjoint matrices
- Q.2 Find the differential co –efficient of the following.
- Q.3 Write a detailed note on the applications of integral calculus.
- Q.4 Give application of Elementary Differential equation of second order and second degree.
- Q.5 Explain Average root mean square deviation of gases by kinetic theory.