

**Mahishadal Raj College**  
**Internal Assessment: 2018**  
**Sub-Industrial Chemistry**  
**Semester: I, Paper code: CC-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Mention possible products of propane chlorination.
2. Describe synthesis of urea from CO<sub>2</sub>.
3. What is cellulose acetate? Give some applications.
4. What is Freon 12?
5. What do you mean by smock point and char value?
6. Distinguish between batch and continuous nitration.

**Mahishadal Raj College**  
**Internal Assessment: 2018**  
**Sub-Industrial Chemistry**  
**Semester: I, Paper code: CC-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define the term "Smelting".
2. Explain the term "Setting of Cement" with appropriate equations
3. Write down the structures of Ortho and Meta silicates.
4. Define the term "Endurance".
5. Write down the composition of glass.
6. Give the chemical reactions take place during corrosion.

**Mahishadal Raj College**  
**Internal Assessment: 2018**  
**Sub-Industrial Chemistry**  
**Year: 2<sup>nd</sup>, Paper code: III**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. What is mean by critical point of a drying rate curve?
2. Mention some advantages of cartridge filter?
3. What is catalyst poisoning? Give one example.
4. Define the term of Gold number.
5. What is katal?
6. What is relative volatility ? Give its significant.

**Mahishadal Raj College**  
**Internal Assessment: 2018**  
**Sub-Industrial Chemistry**  
**Year: 2<sup>nd</sup>, Paper code: IV**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. State the uses of isopropanol.
2. What raw materials are used for manufacturing cumene industrially?
3. State the functions of column in gas chromatography
4. Explain the term surfactant.
5. How impurities of butadiene may be removed?
6. Explain the working principle of atomic spectrometry.

**Mahishadal Raj College**  
**Internal Assessment: 2018**  
**Sub-Industrial Chemistry**  
**Year: 3<sup>rd</sup>, Paper code: VI**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Distinguish the following Offshore drilling and the drilling on land
2. Explain the terms Pour point
3. Which areas of the world has the most deposits of oil ?
4. What is meant by API gravity?
5. Differentiate Octane number and cetane number.

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Semester: II, Paper code: CC-3**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define heat capacity of liquids.
2. State Hess's law.
3. Find out relation between percent saturation & relative saturation.
4. An aqueous solution of NaCl is prepared by dissolving 30 g NaCl in 100g water at 25<sup>0</sup>C. Find out the molality of the solution.
5. Explain the term in Antoine's equation.

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Semester: II, Paper code: CC-4**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define the term “colloid” with example.
2. What are the differences between Heterogeneous & homogeneous catalysis?
3. State the Gibb’s phase rule.
4. What is catalyst promoter. Give example.
5. What are micelles. Explain with an example.
6. Define the term enthalpy and internal energy.

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Year: 2<sup>nd</sup>, Paper code: III**

F.M-10

(Answer the followings questions)

Time -30 min.

1. What is purge ratio?
2. State and explain Raoult’s law?
3. What are filter aids?
4. Write the expression for Freundlich Isotherm.
5. What is aniline point?
6. What is the main difference between a fan and a blower?

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Year: 2<sup>nd</sup>, Paper code: IV**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. How errors of manometers can be rectified ?
2. What raw materials are used for manufacturing cumene industrially?
3. What is BTX ?
4. Write the composition of LNG.
5. What is AAS? Mention its uses.
6. Explain the term "Chemical shift".

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Year: 3<sup>rd</sup>, Paper code: VI**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Distinguish between Flash point and fire point.
2. Explain the terms OPEC.
3. What is meant by Pour point and pour point depressant
4. Discuss various steps used in the drilling an oil well..
5. What is visbreaking?
6. Name sulphur compounds present in petroleum.

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What are the major and minor inorganic constituent of coal ash?
2. What are the important product obtained from starch?
3. What are the component of a particular reforming unit?
4. Differentiate between thermal cracking and catalytic cracking with example.
5. What is nitrate ester? Mention some application.
6. What is hydroammonolysis? Why is it important?

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is roasting?
2. What is sludge disposal?
3. Write the composition of Portland cement.
4. Why silica is added to the roasted copper ores during smelting process?
5. What do you mean by anodising of alumina?
6. What do you mean by vulcanisation of rubber?

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-5**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Explain why change in dipole moment is essential for IR Adsorption.
2. Using 60 MHz instrument (NMR) the chemical shift of a proton was found to be 180 Hz . What would be the chemical shift if a 40 MHz instrument is used ?
3. Explain why ethanol is a good solvent for UV measurement but not for IR?
4. Write the full form of ISO and ISI standard .
5. What do you mean by Accuracy and precision?
6. State Lambert Beers law.

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-6**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What are the common adsorbents used in TLC?
2. What is a chromatogram?
3. What are stationary phase and mobile phase in TLC?
4. Write down the basic principle of paper chromatography?
5. Mention few commonly used ion-exchanger.
6. What is a flame ionization detector?

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-7**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Explain the principle of thermal analysis.
2. What DSC can measure?
3. How does a glass electrode work?
4. Write down the basic principle of thermal mechanical analysis (TMA).
5. What are the advantages and application of gas sensing electrodes?

**Mahishadal Raj College**  
**Internal Assessment: 2019**  
**Sub-Industrial Chemistry**  
**Year-3<sup>rd</sup> , Paper code: VI**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Distinguish between Viscosity and viscosity index.
2. Explain the term Doctoring.
3. What is meant by Octane number and cetane number
4. What is crude petroleum ? Give its composition.
5. Discuss the role of estimation of different properties like specific heat.



**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: II Paper code: CC-3**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is an ideal gas?
2. Define molarity & molality.
3. Distinguish between dry bulb temperature & wet bulb temperature.
4. Write down the general material balance equation for any unit operation.
5. Define the terms yields and selectivity.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: II Paper code: CC-4**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define the term Gold number.
2. What is katal?
3. Write the expression for Freundlich Isotherm.
4. What do you mean by chain reaction? Explain with an example.
5. What is colloid? Give its partial size range?
6. What do you mean by extensive & intensive property.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: IV Paper code: CC-8**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Discuss froth flotation operation.
2. Distinguish extraction and leaching.
3. What is filter press?
4. Describe different sections of a packed tower.
5. State and explain Henry's law.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: IV Paper code: CC-9**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define heat transfer coefficient.
2. What is Fourier law of heat conduction?
3. Write down the significance of Bernoulli's equation.
4. Define the term Transmissivity .
5. Describe the operation of a vacuum pump.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: IV Paper code: CC-10**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Give the principle of direct method and indirect method of liquid level measurement.
2. How is the measurement range limited in float type system?
3. What is the major difference of float level switch and displacer level switch measurement?
4. What is the principle of hydra step boiler drum?
5. What are the disadvantages of resistive method?

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Year-3<sup>rd</sup> , Paper code: VI**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. "Petroleum is recovered almost in the same way as underground water is obtained." –  
Elaborate the statement
2. Explain different steps to recover petroleum.
3. Discuss the production procedure of petroleum coke from petroleum.
4. How can sulphur compounds be separated from petroleum ?
5. Describe the manufacture of chloromethane from methane with essential reactions.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Discuss some advantages of continuous nitration over batch nitration.
2. How Benzene sulfonic acid is manufactured commercially?
3. Describe synthesis of urea from CO<sub>2</sub>.
4. What is vinyl acetate? How it is obtained?
5. Write down the chemical mechanism of amination by reduction
6. How oxalic Acid is manufactured?

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Write down the structures of Ortho and Meta silicates
  2. Define the term “Creeping”
  3. What do you mean by “hard working and cold working” ?
  4. Explain the term “Galvanization” with its use .
  5. Write the differences between thermoplastic and thermosetting materials with examples.
  6. Write the composition and use of Duralumin.
- .

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-5**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Explain working principle of Flame photometer.
2. Acetone on boiling with barium hydroxide furnished two compounds A and B. How with the help of UV Spectroscopy A and B can be characterized ?
3. Describe different absorption bands displayed by saturated aldehyde.
4. Write the full form of ISO and ISI standard .
5. In what respect FTIR is superior than IR spectrophotometer.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-6**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is the role of detectors in chromatography?
  2. Mention few solvents used in column chromatography.
  3. Write down the principle of ion exchange chromatography.
  4. What is the basic principle of paper chromatography?
  5. What information you get from retardation factor value?
- .

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-7**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What are the industrial applications of TMA.
2. Write down advantages of Gas sensing electrodes.
3. State the working principle of DSC.
4. Explain the principle of thermal analysis.
5. What are the applications of gas sensing electrodes ?

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: CC-11**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Explain the mechanism of collision theory
2. What do you mean by Diffusion in liquid.
3. Define the homogeneous catalysis with examples.
4. Write down the Rungakutta method equation.
5. Explain the kinetics of chain polymerization reaction.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: CC-12**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What do you mean by knocking in petroleum?
2. Write about different types of drilling.
3. Why desalting of crude is necessary?
4. What are the impact of sulphur levels in gasoline & diesel?
5. Write the name of the feed stocks of cracker unit of a petroleum.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: DSE-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is triple superphosphate?
2. Give two examples of antimalarial drugs.
3. What is the process of hydrological cycle?
4. What is chlormycetin? What is chloromycetin used for?
5. How phosphoric acid can be synthesized?
6. Explain how dissolved oxygen affects the water quality.

**Mahishadal Raj College**  
**Internal Assessment: 2020**  
**Sub-Industrial Chemistry**  
**Semester: V    Paper code: DSE-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Draw planes with Miller indices (111)
2. What do you mean by voids in solid state ?
3. What do you mean by Frank-Condon principle. ?
4. Why 'Stokes' lines are more intense than 'anti-Stokes' lines.
5. What are the basic metallurgical principles ?
6. Explain the reaction with equation involved in the Cyanide process of extraction of Silver.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: II,    Paper code: CC-3**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define percent saturation & relative saturation
2. Calculate total heat requirement of conversions of 10 MT water at 30°C to steam at 100°C.
3. What do you mean by heat capacity of gases?
4. Write down material balance equation for absorption process.
5. Distinguish between partial pressure & vapor pressure.



**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: II, Paper code: CC-4**

F.M-10  
(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. What are the differences between order & molecularity of a reaction?
2. Write down the Vant Hoff equation.
3. Write a short note on aerosols.
4. Name some important catalyst that are industrially used?
5. What do you mean by associated colloids?
6. What are the differences between lyophobic and lyophilic sols?

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-8**

F.M-10  
(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. What do you mean vacuum distillation?
2. Write down the main criteria of solution for gas absorption.
3. Write down the main criteria of solution for gas absorption.
4. Write down the basic characteristics of packed column.
5. Describe the basic principle Centrifugal Filtration.
6. Write down the short note on screw conveyor.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-9**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. Explain the principles of double pipe heat exchanger.
2. How forced convection is different from natural convection?
3. What is extended surface heat exchanger? How it affects heat transfer?
4. What is friction factor? How it is measured?
5. Can a compressor work as a vacuum pump?
6. A bus consists of diesel having cetane number 45. What it actually means?

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-10**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. Write down the principle of Mercury Barometer.
2. Write down advantages of Automatic control system.
3. What is Differential flow meter?
4. What do you mean by international temperature scale?
5. What are the disadvantages of Bourdon pressure gauge?
6. Discuss the main features of Open-loop control system .

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: CC-13**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What are drug receptors?
2. How can a drug be targeted to a specific organ?
3. Discuss preparation and uses of glyceryl trinitrate.
4. Briefly explain the synthesis and uses of the drugs Diazepam
5. Describe fermentation process for the synthesis of lycine.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: CC-14**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What do you mean by Graft copolymers? Give examples.
2. Write down the differences between Homopolymers and heteropolymers.
3. Define degree of crystallinity
4. Write down the mechanism of Addition polymerization.
5. Write a short note on emulsion polymerization.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: DSE-3**

F.M-10

Time -30 min.

(Answer the followings questions)

1. What is pyrethrum and write the uses of it.
2. Write the chemical name (IUPAC) and structure of DDT.
3. What are the raw materials used for the production of D.D.T.?
4. Write the chemical name (IUPAC) and structure of Gammaxene.
5. How can carbaryl be synthesized from naphthaene?
6. What are the toxic side effects of Malathion?

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: DSE-4**

F.M-10

Time -30 min.

(Answer five questions from the followings)

(5x2) =10

1. What are the advantages of perovskite solar cells?
2. Which type of solar cell is third generation solar cell?
3. Is passive or active solar heating better? Explain.
4. Is solar desalination efficient? Explain.
5. Explain the electrical properties of semiconductors.
6. Explain the working principle of perovskite solar cells.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

- 1 Write down the composition of natural gas.
- 2 What is peroxidation? Give one example.
3. What is chloral? Mention its use.
4. What is hydrolysis? Give one example hydrolysis with aqueous acid.
5. What are the materials used for the manufacture of furfural?
6. What do mean by carbonization of coal?

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is synthetic rubber? Give examples.
  2. Write down the composition of glass.
  3. What are the different categories of solid wastes ?
  4. What do you mean by the term 'setting of cement'?
  5. Explain the physical properties of glass.
- .

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-5**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What do you mean by the term 'relative error'.
2. What is nebulization in Atomic Absorption Spectroscopy?
3. Calculate the mean and standard deviation of the following set of analytical result: 15.67, 15.69 and 16.03g.
4. Describe the basic principle of X-ray fluorescence spectroscopy.
5. Write down the applications of neutron diffraction analysis.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-6**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What are the limitations of paper chromatography technique ?
  2. Give examples of some commonly used ion exchanger.
  3. Explain mobile phase and stationary phase with respect to gas chromatography.
  4. What are the different applications of ion exchange chromatography?
  5. What are the applications of Gas Chromatography ?
- .

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-7**

F.M-10  
(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. What are the applications of gas sensing electrodes ?
2. Write down the basic principle of thermal mechanical analysis.
3. What is amperometry ?
4. Enumerate the relative advantages of differential thermal analysis (DTA).
5. Explain the relative disadvantages of differential scanning calorimetry (DSC).

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: CC-11**

F.M-10  
(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. Explain the mechanism of transition state theory.
2. What do you mean by chain polymerization reaction?
3. Define the heterogeneous catalysis with examples.
4. What is ionic chain reaction?
- 5 Define the explosive reaction with example.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: CC-12**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Name three types of crude based on the nature of compounds present.
2. Discuss the term Kerogen.
3. Distinguish the following Offshore drilling and the drilling on land.
4. State the basic difference between a drag reducing agent and viscosity reducer.
5. What is crude petroleum ? Give its composition.

**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: DSE-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What should be the criteria for designing a bioreactor?
  2. How do you test for coliform in water?
  3. What are greenhouse gases? Write two examples of greenhouse gases.
  4. What is TOC and how it can be measured?
  5. What are COD and BOD in water?
- .



**Mahishadal Raj College**  
**Internal Assessment: 2021**  
**Sub-Industrial Chemistry**  
**Semester: V    Paper code: DSE-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Symmetric stretch mode of vibration of carbon dioxide molecule is Raman active but infrared inactive. Explain.
2. What do you mean by Frank-Condon principle. ?
3. Why intensity of Rayleigh lines is more than Stokes line ?
4. What do you mean by allotropy of iron ?
5. Give a clear distinction between 'metal sulphide smelting' and 'metal oxide smelting'
6. Melting point of alumina is very high but Al is obtained by the electrolysis of alumina at much lower temperature.

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: II, Paper code: CC-3**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define humidity & dew point.
2. How will you calculate average molecular weight of a gas mixture?
3. Make a material balance on distillation column.
4. How will you calculate average heat capacity of a gas mixture?
5. Define purge ratio & combined feed system.

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: II, Paper code: CC-4**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

7. What are the differences of Adsorption & Absorption , explain with examples
8. Define the term Heterogeneous & homogeneous catalysis with example
9. Explain the term Catalyst “Promoter” & Catalyst “Poison” with Examples
10. Define the Langmuir and Freundlich isotherm with equation.
11. Define the term Autocatalysis and enzyme catalysts with examples.
12. Define the term “ Colloid” and “ Micell” with examples.

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-8**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. What is Rault's law & Henry's law?
2. What are azeotropes?
3. What are common packing material used in packed bed column?
4. Define rate of drying? What is bound moisture?
5. What is the basic difference between forward feed & backward feed multiple effect evaporator system?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-9**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. Discuss Newtonian and Non-Newtonian fluid with example .
2. Define continuity equation and Berloni's equation with significance of each term
3. Name of some pumps which are used in Chemical Industries .
4. Write the statement of Fourier's law of heat conduction. Define the term convection.
5. Write principles of co-generation of boiler.
6. Draw the temperature profiles of parallel and counter current flow Heat exchangers.

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-10**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is the principle of ultrasonic sensors?
2. Define Reynolds number?
3. What are the advantages of venturi flow meters?
4. Give the advantages of differential pressure method of level measurement.
5. What is the principle of nuclear radiation method?
6. How the mass flow rate is determined?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: CC-13**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Give two examples of antifungal drug.
2. What is antileprotic? Give one example.
3. Write the chemical name and structure of cetirizine.
4. What are the side effects of ibuprofen?
5. What is antipyretic drug? When is it used?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: CC-14**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Define the term polyethylene and PVC with their chemical structure ? Mention at least One industrial application of polyethylene and PVC .
2. Write the basic differences between homo-polymer and Co-polymer ?
3. Define the term “RESIN”. What do you mean by intrinsic viscosity of polymer ?
4. What is basic differences between thermoplastics & Thermosetting?
5. Explain the role of Co-catalyst in polymerization reaction ?
6. How to control density & molecular weight of polymer .

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: DSE-3**

F.M-10

(Answer the followings questions)

Time -30 min.

1. Write the uses with chemical structure of following pesticides: (2 x 3=6)
  - a) Malathion
  - b) Carbaryl
  - c) Carbofuran
2. Define term pesticides, what are the different types of pesticides on the basis of their chemical nature.

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: DSE-4**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is geothermal energy?
2. What do you mean by 1<sup>st</sup> generation solar cell?
3. Why is solar energy called renewable energy ?
4. How will you measure solar radiation?
5. What are photovoltaic devices?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Differentiate between thermal cracking and catalytic cracking with example.
2. What is nitrate ester? Mention some application.
3. With example explain oxynitration.
4. Define halogenation with example.
5. What is hydroammonolysis? Why is it important?
6. What are the major and minor inorganic constituent of coal ash?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: I Paper code: CC-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Explain why ceramic materials have high melting point ?
2. What is Synthetic Rubber ? Give one example.
3. Explain the term "Calcination"
4. Name of two important alloys of Copper and Aluminium .
5. Define the term " Vulcanization" .
6. Write down the composition of "Gun Metal" with its uses.

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-5**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

6. What information can be obtained from IR Spectral measurement ?
7. What do you mean by Accuracy and precision?
8. Explain why ethylene and ethyne unlike propene and propyne have no carbon-carbon multiple bond stretching vibration.
9. Explain why ethanol is a good solvent for UV measurement but not for IR?
10. Among acetone, dibromo-ethane and acetaldehyde which shows single peak in PMR Spectrum ?
11. What do you mean by standard deviation ?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-6**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Write down the principle of chromatography.
2. What is Thin Layer Chromatography (TLC)?
3. What are normal phase and reverse phase chromatography?
- 4 Write down the principle of HPLC.
5. How GC is useful for qualitative and quantitative analysis?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: III Paper code: CC-7**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is Amperometry?
2. Explain the principle behind the working of an ion selective electrode.
3. What is half wave potential?
4. Explain the basic principle of Voltammetry.
5. What is Dropping mercury electrode?
6. Write down the application of polarography?



**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: CC-11**

F.M-10  
(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. What is ionic chain reaction?
2. Define steady state approximation.
3. Define the heterogeneous catalysis with examples.
4. Write down the Lagrange's formula.
5. Explain the explosive reaction with example.

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: CC-12**

F.M-10  
(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. Discuss the role of different catalysts used in hydrocracking.
2. Differentiate Octane number and cetane number
3. State the basic difference of a drag reducing agent and viscosity reducer.
4. Distinguish Flash point and fire point.
5. What are important products obtained from crude petroleum?

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: DSE-1**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. Name of different type fertilizer used for agricultural purposes
2. Write the major uses of acrylonitrile.
3. Explain the term “N-P-K ratio”.
4. What is meant by “explosive limit”.
5. Write the important use of Triple super Phosphate fertilizer .

**Mahishadal Raj College**  
**Internal Assessment: 2022**  
**Sub-Industrial Chemistry**  
**Semester: V Paper code: DSE-2**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What is Lambert-Beer law?
2. What is the basic principle of Thermogravimetric Analysis (TGA)?
3. Write down the basic principle of conductometric titration.
4. What are stationary and mobile phase?
5. What is the significance of Fourier Transform in IR?

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: II, Paper code: CC-3**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. Define standard heat of formation.
2. Distinguish between vapor pressure and partial pressure.
3. Write down Clapeyron equation and explain each term involved.
4. Define the terms limiting reactant and excess reactant.
5. Distinguish between dry bulb temperature & wet bulb temperature.
6. Discuss the utility of by-pass operation.

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: II, Paper code: CC-4**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

13. What do you mean by sol-gel process. Give one example.
14. State the Gibb's phase rule.
15. What do you mean by activation energy of a reaction?
16. Write down the differences between order and molecularity of a reaction.
17. What do you mean by Adsorption? Give one example
18. Explain the term extensive and intensive property. Give one example.

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-8**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

1. What is filter press?
- 2 Distinguish extraction and leaching.
- 3 What is meant by fractional distillation.
4. Describe the operation of a pneumatic conveyer.
5. Describe crystallization process.

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-9**

F.M-10

(Answer five questions from the followings)

Time -30 min.  
(5x2) =10

5. What is the basic difference between a blower and a compressor?
6. What is Fourier law of heat conduction?
7. Distinguish Newtonian and non-Newtonian fluid.
4. What is meant by octane number & cetane number?
5. State Kirchoff's law.
6. Distinguish natural and forced convection.

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: IV, Paper code: CC-10**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. State Bernoulli's theorem
2. Define stagnation point.
3. What is the major difference between float level switch and displacer level switch measurement?
4. What are the methods used in liquid level measurement in boiler drum?
5. What are the advantages of Hydra step gauge?
6. What are the advantages of orifice plate?

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: CC-13**

F.M-10

(Answer five questions from the followings)

Time -30 min.

(5x2) =10

1. What does poison mean in drugs?
2. How can you reduce the side effects of cetirizine?
3. What is the synthesis of analgesic?
4. What are the symptoms of central nervous system drugs?
5. How is vitamin B-12 produced?
6. What is the solvent for streptomycin?
7. How is Lysine formed?

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: CC-14**

F.M-10

Time -30 min.

(Answer five questions from the followings) (5x2) =10

1. Define the term polyethylene and PVC with their chemical structure ?
2. Write the basic differences between homo-polymer and Co-polymer?
3. Explain the term UF and PF resin .
4. What is the basic differences between Crystallization & Crystallinity ?
5. Write three basic differences between thermoplastics & Thermosetting .
6. What is the industrial application of Neoprene and Teflon ?

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: DSE-3**

F.M-10

Time -30 min.

(Answer five questions from the followings) (5x2) =10

1. What is limonene? Write the structure of it
2. Write the name of two natural and two synthetic pesticides.
3. Explain the term natural and synthetic pesticides with example ?
4. Write down the effect of pesticides on human beings.
5. Why rotenone is useful as an insecticide ?
6. What is Azadirachtin ? Write its chemical formula.

**Mahishadal Raj College**  
**Internal Assessment: 2023**  
**Sub-Industrial Chemistry**  
**Semester: VI, Paper code: DSE-4**

F.M-10

Time -30 min.

(Answer five questions from the followings) (5x2) =10

1. Differentiate renewable & nonrenewable resources of energy?
2. What is solar PV system?
3. How solar energy can be utilized by converting it into thermal energy?
4. Differentiate irradiance and irradiation.
5. How can you measure solar radiation available?