

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
Faulty of Science
B.Sc. I Year Practical Examination
March/April 2009
Industrial Chemistry
Laboratory Course Paper- III

Time: 3 Hours

Marks: 100

- N.B:* 1) Write down your University Examination Seat number on your Answer book.
2) Obtain the signature of the Examiner on the observations before you start the calculation.
3) Calculator is allowed for calculations.

Q. No.1 Write the correct procedure for the given experiment	10 Marks
Q. No.2 To Determine the Co-efficient of Venturi meter	70 Marks
OR	
To Determine the Co-efficient of Orifice meter	
OR	
To Study the Characteristics of Centrifugal Pump	
OR	
To Verify Hagen-Poisellues Equation	
OR	
To Study the Pipe Fittings Test Rig	
OR	
To Study the Thermal Conductivity of Insulating Powder	
OR	
Determination of Acid Value of Lubricating Oil	
OR	
Determination of Saponification Value of Lubricating Oil	
OR	
Determination of Iodine Value of an Oil (Wij 's Method)	
OR	
Determination of Aniline Point of a Lubrication Oil	
OR	
Determination of Viscosity of Lubricant by Red Wood Viscometer	
OR	
Determination of Flash & Fire Point of Lubricating Oil by Cleveland's Apparatus (Open Cup)/ Abel's Apparatus (Closed Cup)/ Pensky-Marten's Apparatus (Closed Cup).	
Record Book	10 Marks
Viva-Voce	10 Mark

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
Faulty of Science
B.Sc. I Year Practical Examination
March/April 2009
Industrial Chemistry
Laboratory Course Paper- IV

Time: 3 Hours

Marks: 100

- NE.: 1) Write down your University Examination Seat number on your Answer book.
2) Obtain the signature of the Examiner on the observations before you start the calculation.
3) Calculator is allowed for calculations.

- Q. No.1 Write the correct procedure for the given experiment. 10 Marks
Q. No.2. Determination of pH, Turbidity, Conductivity, Temperature, TDS, of given water sample by Water Quality Analyzer *Elico-PE-138*. 70Marks

OR

Determination of Hardness of water by Complexometric method using EDTA

OR

Determination of Calcium & Magnesium Hardness Using EDTA

OR

Determination of Dissolved Oxygen in a Water Sample

OR

Determination of Chemical Oxygen Demand

OR

Determination of BOD of a Waste Water Sample

OR

Experiment on Proximate Analysis of Coal:

Determine 1. Moisture 2. Volatile Matter 3. Ash 4. Fixed Carbon

OR

Determination of Available Chlorine in Bleaching Powder

OR

Estimation of Iron from Cement Volumetrically

OR

Estimation of Calcium from lime Stone

OR

Determine Energy of Activation of the reaction between Potassium Persulphate & Potassium Iodide

OR

Determination of available Chlorine in Bleaching Powder

Record Book 10 Marks

Viva-Voce 10 Mark

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
Faculty of Science
B.Sc. II Year Practical Examination
March April 2009
Industrial Chemistry
Laboratory Course Paper- VII (Chemical Reaction Engineering)

Time: 3 Hours

Marks: 100

- NB.* : 1) Write down your University Examination Seat number on your Answer book.
2) Obtain the signature of the Examiner on the observations before you start the calculation.
3) Calculator is allowed for calculations.

Q. No. 1 Write the correct procedure for the given experiment. 10 Marks

Q. No. 2 60 Marks

To Study the Performance of Batch Reactor: To study the Saponification of Ethyl acetate with NaOH in order to determine Order of reaction (n) & Rate constant (K) using Batch reactor.

OR

To Study the Performance of Constant Stirred Tank Reactor by using Ethyl acetate & NaOH.

OR

To Study the Performance of Plug Flow Reactor: To study the Performance of plug flow reactor used and to calculate theoretical & practical conversion for a second order reaction between Ethyl acetate & NaOH.

OR

To Study the Performance equation of Coil Tube Reactor: To study the Performance of plug flow reactor used and to calculate theoretical & practical conversion for a second order reaction between Ethyl acetate & NaOH.

OR

To Study the First Order Reaction: Hydrolysis of an Ester (Methyl Acetate in presence of HCL).

OR

To Study the Zero Order Reaction: Investigate the kinetics of Iodination of Acetone.

OR

To Study the Autocatalytic reaction: Reaction between Potassium Permanganate & Oxalic acid.

OR

To Study the Rate of reaction (r_A) between Ethyl bromo acetate & Sodium thiosulphate kinetically using Batch Reactor

OR

To determine the Order of reaction (n) of given reaction Kinetics by using Substitution method, Fractional change method and Differential method.

OR

To determine the Rate Constant (K) of the reaction between Potassium Persulphate & Potassium Iodide having equal concentration of reacting species (a=b) by using Mixed Reactor

OR

To determine the Rate Constant (K) of the reaction between Potassium Persulphate & Potassium Iodide having unequal concentration of reacting species ($a \neq b$) by using Mixed Reactor

OR

To determine rate constant (K) of the reaction between Bromic acid and Hydroiodic acid having equal concentration of reacting species ($a=b$) using Batch reactor

OR

To determine the Energy of Activation (E_a) of hydrolysis of Ethyl acetate in presence of NaOH

OR

To determine the Energy of Activation (E_a) of the reaction between Potassium Persulphate & Potassium Iodide

Record Book

20 Marks

Viva-Voce

10 Mark

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Faulty of Science

B.Sc. II Year Practical Examination

March April 2009

Industrial Chemistry

Laboratory Course Paper- VIII (Unit Operations-II)

Time: 3 Hours

Marks: 100

NE.: 1) Write down your University Examination Seat number on your Answer book.

2) Obtain the signature of the Examiner on the observations before you start the calculation.

3) Calculator is allowed for calculations.

Q. No.1 Write the correct procedure for the given experiment. 10 Marks

Q. No.2 60 Marks

To perform a expt. On simple Distillation using binary mixture (Methanol + Water or Ethanol+Water) & verify the Raleigh's Equation and Calculate the Material Balance for simple distillation

OR

To Perform a expt. on Steam Distillation using Terpentine and Calculate Material Balance for Steam Distillation

OR

To Perform a experiment on Distillation with total reflux using Binary mixture (Methanol + Water or Ethanol + Water) and Calculate number of plates for fractionating column

OR

To study the experiment on Liquid-Liquid Extraction (Acetic acid, Toluene & Water) & Calculate Percentage of Extraction

OR

To study the Liquid-Liquid Equilibria for three component system (Glacial Acetic Acid +Chloroform+ Distilled Water) and Calculate the Percentage composition of each component at heterogeneous mixture

OR

To study the Rate of Drying of solid substances

OR

To study the Rate of Drying of Liquid substances

OR

To Crystallise the given sample of Phthalic acid from hot water using fluted paper and stemless funnel

OR

To Crystallise the given sample of Benzoic acid from hot water using fluted paper and stemless funnel

OR

To purify the given sample of naphthalene or camphor by simple sublimation method

OR

To purify the given sample of Succinic acid or phthalic acid by vacuum sublimation method.

OR

Determine the rate of evaporation of given liquid Sample.

Record Book 20 Marks

Viva-Voce 10 Marks

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Faulty of Science

B.Sc. III Year Practical Examination

Industrial Chemistry Paper XI

Time: 4 Hours

Marks: 100

Date

- Q.1 Estimate the amount of strong acid and weak acid in the given mixture by pH meter
25 marks

OR

Estimate boric acid conductometrically.

- Q.2 Prepare pure sample of anthranilic acid from phthalimide. 25 marks
Determine physical constant and calculate the % yield.

OR

To prepare pure sample of 2, 4, 6 tri-nitro phenol starting with phenol Determine physical constant & Calculate the % yield

- Q.3 To determine the time constant of first order measurement device. 25 marks

OR

Determine the equivalent weight of the organic acid by iodide – iodate method.

OR

Separate the mixture of amino acid by paper chromatography.

OR

Separate the mixture of amino acid by TLC

OR

Estimate the amount of glucose in the given sample of Honey

OR

Assay of analgesic drug

OR

Assay of the anti-malarial drug

Viva-voce

20 Marks

Record Book

05 Marks

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Faulty of Science

B.Sc. III Year Practical Examination

Industrial Chemistry Paper XII

Time: 4 Hours

Marks: 100

Date

Q.1 Project Work

Project / thesis submission

40 marks

Presentation of project

20 marks

Importance / reference work / quality of work

15 marks

Q.2 Report of the visit to chemical plant and submission of its report

Presentation of report

15 marks

Oral presentation

10 marks