



DQ-003-001416

Seat No. _____

Second Year B. Sc. (Sem. IV) (CBCS) Examination

April / May – 2015

IC. P - 401 : Industrial Chemistry

Faculty Code : 003

Subject Code : 001416

Time : $2\frac{1}{2}$ Hours

[Total Marks : 70

INSTRUCTIONS:

- 1) All the questions are compulsory
- 2) Figures to the right indicate maximum marks.
- 3) Draw labeled diagram wherever necessary.
- 4) Assume suitable data.
- 5) Question-1 carries 20 marks MCQ & should be written in the same answer sheet.
- 6) Question-2 & 3 carries 25 marks each.

MCQ

Que: 1

20-Marks

- 1 In Nitration reaction, hydrogen substitution is favoured when _____ structure
 - a. Highly branched
 - b. Less branched
 - c. Both
 - d. None
- 2 For the manufacturing of Dioctyl Phthalate which raw material is used?
 - a. Phthalic anhydride
 - b. 2-ethylhexanol
 - c. Both a & b
 - d. None
- 3 Carboxylic acid reacted with alcohol gives _____ as by-product.
 - a. Ester
 - b. Alkane
 - c. Water
 - d. Hydrocarbon
- 4 Most suitable temperature for nitration of toluene to mono nitro toluene is _____ °F
 - a. 50 to 55
 - b. 125 to 135
 - c. 170 to 175
 - d. 225 to 235
- 5 $R-NO_2 + 3 Na_2SO_3 + H_2O \rightarrow R-NH_2 + 3 Na_2SO_4$; this method is known as _____
 - a. Bechamp method
 - b. Piria method
 - c. Lucas method
 - d. Kart method
- 6 Most suitable temperature for conversion of benzene to nitrobenzene is _____ °C
 - a. 25 to 30
 - b. 50 to 55
 - c. 70 to 75
 - d. 95 to 100
- 7 Three isomers of dinitrobenzene are separated by _____
 - a. Acid Wash
 - b. Alkali Wash
 - c. Water Wash
 - d. All above
- 8 Three isomers of Chloro nitro benzene are separated by _____
 - a. Only distillation
 - b. Only evaporation
 - c. Only crystallization
 - d. Distillation & Crystallization
- 9 In nitration of acetanilide to p-nitroacetanilide, suitable temperature is kept low _____
 - a. To prevent hydrolysis
 - b. To prevent nitration
 - c. To accelerate nitrogen
 - d. To accelerate hydrolysis
- 10 _____ used against rats & mice.
 - a. Rodenticides
 - b. Nematicides
 - c. Molluscides
 - d. All of the above

- 11 Zigzag separator is used for the separation of _____.
- a. Paper
b. Metal
c. Wood
d. None
- 12 Which of the following is an electromagnetic radiation?
- a. Proton particles
b. Cosmic rays
c. X-rays
d. Energetic neutrons
- 13 Odour pollution of water is caused by _____.
- a. Free chlorine
b. Fungi
c. Alcohols
d. All of the above
- 14 The efficiency of the aerated lagoons is _____.
- a. 50-60%
b. 30-40%
c. 70-95%
d. None of the above
- 15 The moisture content of garbage solid waste is _____.
- a. 35%
b. 55%
c. 10%
d. 70%
- 16 Optical pyrometer is used for ____ measurement.
- a. temperature
b. density
c. density
d. none of these
- 17 _____ is for measuring specific gravity of liquid.
- a. Diaphragm box
b. Manometer
c. Optical pyrometer
d. Hydrometer
- 18 MacLeod gauge is used for ____ measurement.
- a. Temperature
b. pressure
c. density
d. flow rate
- 19 Ultrasonic method is used for ____ measurement.
- a. Temperature
b. Liquid level
c. Pressure
d. (a) & (b) both
- 20 _____ is used for manufacturing of glass.
- a. Tank furnace
b. electric arc furnace
c. Open hearth furnaces
d. Reverberatory furnace

Theory

Que: 2 (a) Answer any Three

06-Marks

- 1) Enlist various types of alkylation reactions.
- 2) Enlist various types of Esterification reactions.
- 3) Give classification of pesticides.
- 4) Write a comparison between Trickling filter and Activated sludge system.
- 5) Explain annealing treatment of glass in short.
- 6) Draw the diagram of pneumatic balance pressure thermometer.

Que: 2 (b) Answer any Three

09-Marks

- 1) Describe batch Nitration of benzene.
- 2) Describe manufacturing of Ethyl acetate by batch process.
- 3) Discuss Classification of solid waste based on moisture and heating value in detail.
- 4) Explain source of radiation.
- 5) Explain diaphragm gauge.
- 6) Explain float type level indicator.

Que: 2 (c) Answer any Two

10-Marks

- 1) Describe manufacturing of Cellulose acetate.
- 2) Describe chemical and physical factors affecting Ammonolysis.
- 3) Explain Noise pollution in detail.
- 4) Explain different types of glasses.
- 5) Explain the static characteristics of an instrument.

Que: 3 (a) Answer any Three

06-Marks

- 1) Enlist various Nitrating agents.
- 2) Define: Ammonolysis, Aminolysis and hydro Ammonolysis.
- 3) Define: (a) BOD (b) COD
- 4) Define: Water Pollution
- 5) Sketch diagram of glass manufacturing process.
- 6) Write the principle of: - (1) glass thermometer (2) bimetallic thermometer.

Que: 3 (b) Answer any Three

09-Marks

- 1) Describe various Ammonolysis reactions using Ammonia.
- 2) Describe various Aminating agents.
- 3) Discuss control of thermal pollution.
- 4) Give a diagram for Dissolved air flotation system.
- 5) Explain ultrasonic method for level measurement.
- 6) Write the working of constant volume gas thermometer

Que: 3 (c) Answer any Two

10-Marks

- 1) Describe nitration of benzene by fortified spent acid.
- 2) Describe manufacturing of Detergent.
- 3) Explain zig-zag separator for metal in detail.
- 4) Discuss Activated sludge system in detail.
- 5) Explain the construction & working of pressure spring thermometer.