NAN-003-001647 Seat No. _____

B. Sc. (Sem. VI) (CBCS) Examination

March / April - 2017

IC-602 : Industrial Chemistry

(Heavy & Fine Chemicals-2 & Analytical Chem.)

Faculty Code : 003
Subject Code : 001647

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All the questions are compulsory.
(2) Draw labeled diagram wherever necessary and assume suitable data.
(3) Question-1 carries 20 marks.
(4) Question-2 and 3 carries 25 marks each.

1 Answer the following questions : **20**

(1) Draw the formula of Tributyl Phosphate.

(2) Write a structure of 1,4-dioxane.

(3) _____ catalyst is used for manufacturing of THF from Furan.

(4) Perchloric acid is manufactured by _____ method.

(5) Define: Intentional additives.

(6) Give full form of H.L.V.

(7) What is Emulsion?

(8) Write minimum two uses of Ketenes.

(9) Give two chromatographic coating materials used as adsorbent.

(10) The tail part of surfactant molecule is usually a _____ group.

(11) _____ column is used in Gas Chromatography.

(12) What is the pH of distilled water?

(13) What is the principle of Colorimetric analysis?

(14) What is `Thief sampling procedure?

(15) _____is used to take samples from conveyors.

(16) Give name of gases which are used as mobile phase in Gas chromatography.

(17) NMR spectrometer is used to identify _____ of the unknown compound.

(18) _____ detector used in HPLC technique.

(19) _____ prism is used as an analyzer in Polarimetry technique.

(20) _____ is stationary phase in HPLC columns.

2 (a) Answer any **three** : **6**

(1) Write four uses of Diethyl amine.

(2) Give only reaction of Tributyl phosphate from butanol.

(3) Explain cold fat extraction method in brief.

(4) What are the advantages of Potentiometric titrations?

(5) Write a short note on partition co-efficient.

(6) Explain Conductometry titration against strong acid and strong base.

(b) Answer any **three** : **9**

(1) Write a short note on Karl-Fischer reagent.

(2) Write a short note on Cinnamal.

(3) Give various stereo isomer structures of Tartaric acid.

(4) Explain carrier gas supply in Gas liquid chromatography.

(5) Write a short note on sampling of liquids.

(6) Discuss applications of NMR spectrometer.

(c) Answer any **two** : **10**

(1) Explain manufacturing of Methanolfrom synthesis gas with schematic diagram.

(2) Discuss manufacturing of Citric acid with diagram.

(3) Explain in detail. Conductometry titration

(4) Write a detailed note on Mass Spectrometer

(5) Explain Atomic Emission Detector (AED) in detail.

3 (a) Answer any **three** : **6**

(1) Give only reaction of DMF from Formic acid.

(2) Write four uses of Potassium dichromate.

(3) Enlist classification of surfactant.

(4) Write short note on columns which are used in chromatography techniques.

(5) Discuss specific applications of UV-Viz. spectrometer.

(6) Enlist various application of Gas-Liquid chromatography.

(b) Answer any **three** : **9**

(1) Draw only block diagram for manufacturing of Sulfolane.

(2) Write a short note on Fehling solutions.

(3) Give difference between Perfumes and Flavour.

(4) Explain Flame Ionization Detector (FID) in detail,

(5) Write a short note on UV-Viz. Spectrometer.

(6) Explain Colorimetric analysis in detail.

(c) Answer any **two** : **10**

(1) Explain production of N-alkylated ethanol amine.

(2) Discuss manufacturing of chloroform with diagram.

(3) Explain manufacturing of butyl amines with diagram.

(4) Discuss in detail. IR spectrometer

(5) Explain Abbe refractometer in detail.