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MAN-003-001647 Seat No. _____

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

March / April - 2018

Industrial Chemistry

(IC-602 : Heavy & Fine Chemicals - II & Analytical Chemistry)

Faculty Code : 003
Subject Code : 001647

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

Instructions :
(a) All the questions are compulsory.
(b) Figures to the right indicate maximum marks.
(c) Draw labeled diagram wherever necessary and assume suitable data.
(d) Question-1 carries 20 marks objective type questions.
(e) Question-2 and 3 carries 25 marks each.

1 Attemp all questions : **20**

(1) Triphenyl phosphine is used as polymerization inhibitor. True/False

(2) Give two uses of Nujol.

(3) Give full form of D.M.F.

(4) Oxidation of ethylene using $PdCl_2$ and $CuCl_2$ gives _____ product.

(5) Give minimum two uses of 1, 4-Dioxane.

(6) Give composition of Roschella salt.

(7) Sodium methylate is also known as _____.

(8) By which method Perchloric acid can be manufactured ?

(9) Maceration is also known as _____.

(10) The nature of silica gel is _____ which is used as chromatographic coating material. (Acidic/Neutral)

(11) Indicator electrode is made up of _____.

(12) Enlist two types of conductance.

(13) Polarimeter is used to measure _____ of optical active compound.

(14) What is Refractive index of water ?

(15) A large solid sample should be reduced to small _____ scale size during sampling.

(16) Which containers are used for sampling of gases like oxygen, nitrogen, carbon dioxide etc.

(17) Mobile phase used in Gas-Solid chromatography is _____.

(18) IR Spectroscopy is used to determine _____ present in the compound.

(19) Ultra violet region falls in the range between _____ nm to _____ 400 nm.

(20) Mass Spectrometry is used to determine _____ of the compound.

2 (a) Answer any Three out of six : **6**

(1) Write uses of Tributyl phosphate.

(2) Give reaction for manufacturing of cinnamaldehyde.

(3) Define the term 'Emulsion' with example.

(4) Discuss principle of Conductometric titration.

(5) Draw only diagram of Flame Ionization Detector.

(6) Discuss any one chromatography behavior of solutes.

(b) Answer any three out of six : **9**

(1) Write a note on Tetrahydrofuran.

(2) Give various reactions for manufacturing of sodium bicarbonate.

(3) Give difference between Fixed oils and Essential oils.

(4) Discuss advantages of Conductometric titration.

(5) Give applications of NMR spectroscopy.

(6) Discuss various graph patterns of Potentiometric titration.

(c) Answer any two out of five : **10**

(1) Explain manufacturing of carbon tetrachloride with diagram.

(2) Give an account of surfactants in detail.

(3) Explain various Distillation methods for production of essential oils.

(4) Discuss UV Spectroscopy with schematic diagram.

(5) Explain Colorimetry method with diagram.

3 (a) Answer any three out of six : **6**

(1) Write a note on 1, 4-dioxane.

(2) Give reaction for manufacturing of butyl amine.

(3) Enlist applications of citric acid.

(4) Write principle of Refractometry method.

(5) Discuss classification of chromatographic method.

(6) What is sampling methodology ?

(b) Answer any three out of six : **9**

(1) Discuss Diethyl ether in brief.

(2) Write a brief note on N-methyl-2-pyrrolidone.

(3) Discuss various structures of Tartaric acid.

(4) Write various application of GLC.

(5) Explain sampling of solid in brief.

(6) Write advantages of Potentiometric titration over ordinary indicator method.

(c) Answer any two out of five : **10**

(1) Explain production of various alkyl amines with diagram.

(2) Discuss manufacturing of oxalic acid by any two processes.

(3) Describe components of NMR spectroscopy.

(4) Discuss pH metric titration method in detail.

(5) Describe Infrared spectroscopy method with neat diagram.