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PA-003-001647 Seat No. _____

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

March / April - 2020

IC - 602 : Heavy & Fine Chemicals - 2 & Analytical Chemistry

Faculty Code : 003

Subject Code : 001647

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.
(6) Question-2 & 3 carry 25 marks each.

1 Answer the following questions : **20**

(1) Main raw material for manufacturing of THF is _____.

(2) Carbon tetrachloride can be used as cleaning agent. True/False?

(3) Give full form of DMF.

(4) Dioxane can be used as solvent. True/False?

(5) Suitable catalysts for manufacturing of Methanol are _____ & _____.

(6) Write chemical formula of Perchloric acid.

(7) Sodium ethylate is also known as _____.

(8) Caustic soda is manufactured via Solvay process. True/False?

(9) Hot fat extraction Is also known as _____.

(10) _____ microorganism is mostly used for industrial fermentation.

(11) Give full form of GC.

(12) Calomel electrode is made up of _____.

(13) Polarimeter utilizes _____ lamp as light source.

(14) Inert gas can be used as stationary phase in chromatography. True/False?

(15) Capacity ratio is also called as _____.

(16) Give full form of AED.

(17) Flame ionization detector is used to analyze _____ compounds.

(18) Give full form of IR spectroscopy.

(19) Which spectrometry is used to determine molecular mass present in molecule?

(20) R_f oscillator is used in NMR technique. True/False?

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

(1) Give manufacturing reaction, uses and properties of DMF.

(2) Give properties and uses of Potassium bromide.

(3) State the principle of conductometry titration.

(4) Write principle of pH metric titration.

(5) Define the term :

(i) Chromatography

(ii) Spectroscopy

(6) Write a note on tributyl phosphate.

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

(1) Write only manufacturing reaction and uses of Citronellol.

(2) Write a brief note on sampling methodology.

(3) Write a short note on N-methyl-2-pyrolidone.

(4) Explain graphical representations of conductometry titration method.

(5) Write only manufacturing reaction and uses of Cinnamal.

(6) Discuss column oven used in chromatography in brief.

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

(1) Discuss manufacturing of chloroform with neat diagram.

(2) Write a short note on surfactants.

(3) Explain various isomers of tartaric acid.

(4) Write a short note on Flame Ionization Detector (FID) with an appropriate diagram.

(5) Explain sampling of solid in detail.

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

(1) Write a brief note on Fehling solution.

(2) Write uses of Karl-Fischer reagents.

(3) Explain basic sampling rules of the substance in industry.

(4) Give properties and uses of tartaric acid.

(5) Write down the principle of Potentiometry titration.

(6) Draw only diagram of gas liquid chromatography technique.

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

(1) Write a short note on chromatographic column.

(2) Write preparation reaction and uses of DMSO.

(3) Draw only diagram of thermal conductivity detector

(4) Write a short note on Perchloric acid.

(5) Write industrial uses of food additives.

(6) Discuss principle, construction and working of Refractometer.

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

(1) Write manufacturing process of citric acid with diagram.

(2) Write a short note on Emulsifiers.

(3) Explain Solvay process with neat diagram.

(4) Discuss sampling of gas in detail.

(5) Explain colorimetry analysis with diagram.
