



**JB-003-001647**

Seat No. \_\_\_\_\_

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

**August – 2019**

**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 labelled diagrams 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) Triphenyl phosphine is important \_\_\_\_\_ inhibitor.
  - (2) Carbon tetrachloride can be used as cleaning agent.  
True/False?
  - (3) Give full form of DMSO.
  - (4) 1,4-dioxane can be produced from diethylene glycol and \_\_\_\_\_
  - (5) THF can be produced from furan using \_\_\_\_\_ catalyst.
  - (6) By which process perchloric acid can be synthesized?
  - (7) Sodium methoxide is also known as \_\_\_\_\_
  - (8) Washing soda is manufactured via Solvay process.  
True/False?
  - (9) Cold fat extraction is also known as \_\_\_\_\_
  - (10) Which microorganism is mostly used for industrial fermentation?
  - (11) Give full form of GLC.

- (12) Reference electrode is made up of \_\_\_\_\_
- (13) Light source used in polarimeter is \_\_\_\_\_
- (14) Silica gel can be used as stationary phase in chromatography. True/False?
- (15) Partition ratio is also called as \_\_\_\_\_
- (16) Give full form of ASTM.
- (17) Flame ionization detector is used to analyze \_\_\_\_\_ compounds.
- (18) Which spectroscopy is used to identify functional group present in a compound?
- (19) Mass spectrometry is used to determine \_\_\_\_\_ present in molecule.
- (20) NMR stands for what?

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

6

- (1) What is HLV?
- (2) Write a note on Tributyl phosphate.
- (3) Give composition of Fehling solutions.
- (4) Write principle of pH metric titration.
- (5) Discuss in brief sample injection system in chromatography.
- (6) Elaborate the word 'Capacity ratio'.

(B) Answer any **three** :

9

- (1) Discuss with diagram production of Citronellol.
- (2) Explain in brief types of emulsions.
- (3) Write a short note on N-methyl-2-pyrrolidone.
- (4) Explain graphical representations of conductometric titrations.
- (5) Write a brief note on sampling methodology.
- (6) Discuss in brief column oven used in chromatography.

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

- (1) Discuss with neat diagram manufacturing of methylene chloride.
- (2) Explain various isomers of tartaric acid.
- (3) Explain in detail classification of surfactants.
- (4) Explain IR spectroscopy with neat diagram.
- (5) Write with diagram a detailed note on flame ionization detector.

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

- (1) Draw only diagram for manufacturing of acetaldehyde.
- (2) Write a brief note on DMF.
- (3) What are intentional food additives?
- (4) Write principle of pH metry titration method.
- (5) Enlist classification of chromatography.
- (6) Draw only diagram of Gas liquid chromatography technique.

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

- (1) Write a brief note on ethyl acetoacetate.
- (2) Write industrial uses of food additives.
- (3) How essential oil is extracted by steam distillation method?
- (4) Discuss with schematic diagram principle and working of Refractometer.
- (5) Enlist any one basic rule for sampling.
- (6) Draw only diagram of thermal conductivity detector.

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

- (1) Explain with diagram manufacturing of amino ethanol.
- (2) Discuss in detail sampling of gas.
- (3) Explain with diagram refractometry analysis.
- (4) Explain with diagram NMR spectroscopy.
- (5) Discuss fat extraction method for production of essential oils.