MBZ-003-045303 Seat No. _____

B. Voc. (Chemical Tech.) (Sem. III) (CBCS) Examination

December – 2016

BVCT-303 : Industrial Unit Process & Operation

Faculty Code : 003
Subject Code : 045303

Time : Hours] [Total Marks : **70**

Instructions : (i) All questions are compulsory and carry equal marks.
(ii) Draw diagram and/or scheme wherever necessary.

1 (a) Answer the following questions : **10**

(1) What is halogenation reaction?

(2) Give the structural formula of Freon-12.

(3) Give the reaction for synthesis of maleic anhydride.

(4) Give any two vigorous catalyst used for hydrogenation reaction.

(5) Give structural formula of p-nitroacetanilide.

(6) What is sulphonation reaction?

(7) Define distillation.

(8) What is bubble point?

(9) What is fractional distillation?

(10) Define the term : Adsorption.

(b) Answer the following questions : **20**

(1) Write down thermodynamics of sulphonation reaction.

(2) Enlist methods of hydrogenation other than catalytic hydrogenation reagent.

(3) Enlist any four reagents used in oxidation reaction.

(4) Enlist the nitrating agents used in nitration reaction.

(5) Discuss chemical kinetics of halogenations reaction.

(6) Explain Raoult's law.

(7) Explain idea and real solutions.

(8) Differentiate Distillation and Evaporation.

(9) Write a note on condenser.

(10) Differentiate between gas adsorption and stripping.

2 Answer any 4 out of the following 6 questions : **20**

(1) Describe continuous sulphonation process of dodecyl benzene with diagram.

(2) Discuss manufacturing process of acrolein with diagram.

(3) Describe chlorination of methane with diagram.

(4) Discuss reforming process in hydrogenation with diagram.

(5) Explain with illustration: Counter-current multi-stage adsorption.

(6) Explain the principle of simple distillation. Explain the construction and working principle of simple distillation assembly of lab scale with figure.

3 Answer any 4 out of the following 6 questions : **20**

(1) Describe continuous nitration process of benzene to nitrobenzene with diagram.

(2) Discuss manufacturing of methanol with diagram.

(3) Describe synthesis of sodium mono chloro acetate with diagram.

(4) Write a note on industrial applications of gas absorption.

(5) Explain the boiling point diagram in detail.

(6) Discuss in detail: Applications of distillation.
