(A-10) Seat No: _____ No. of printed Pages: 02

SARDAR PATEL UNIVERSITY

B. Sc. Examination (Fifth semester) (N)

Tuesday10th May 2016

US05CICH02 (Unit Process in Organic Manufacture)

Time: 10:30 a.m. to 1:30 p.m. **Total Marks: 70**

Q-1 Choose the most appropriate option for each of the following. **[10]**

1. _____ is a unit process.
   (a) Distillation (b) Mixing (c) Crystallization (d) Alkylation
2. _____ is a reducing agent.
   (a) Fe+ acid (b) Caro's acid (c) $KMnO_4$ (d)H_2O_2
3. Fuming sulfuric acid is _____ .
   (a) $H_2SO_4 + SO_3$ (b) $H_2SO_4 + Cl_2$ (c) $H_2SO_4 + H_2O$ (d) $H_2SO_4 + SO_2$
4. Conversion of alcohol into aldehyde is an example of _____ reaction.
   (a) oxidation (b) reduction (c) alkylation (d) esterification
5. Barbet process operated in Batch at _____ °C.
   (a) 100-120 (b) 160-180 (c) 150-160 (d) 200-210
6. $R\text{-}COOH + SOCl_2 \rightarrow$ (?)
   (a) R-Cl (b) R-O-Cl (c) R-COCl (d) $R\text{-}SO_3H$
7. _____ is most commonly used catalyst in oil hardening.
   (a) Ni (b) Cu (c) Al (d) Hg
8. _____ isomer of BHC is an insectically active.
   (a) Alpha (b) Beta (c) Delta (d) Gamma
9. _____ is not hydrolysis agent.
   (a) Water (b) Benzene (c) water + Acid (d) Water + Base
10. In gold has proposed _____ possible mechanism for ester hydrolysis.
    (a) 06 (b) 08 (c) 04 (d) 01

Q-2 Attempt any ten questions of following. **[20]**

1. Give the mechanism of nitration of benzene.
2. Explain function of H_2SO_4 in mixed acid.
3. Explain the term ammonolysis.
4. Define the term sulfochloronation.
5. Give application of sulfonates.
6. Give list of principle sulfonating agent.
7. Explain the term hydrogenation reaction.

(PTO)

8. Give the list of catalyst used for hydrogenation reaction.

9. Write about iodination reaction.

10. Explain the term esterification.

11. Define the term trans esterification.

12. Give the mechanism of Friedel-Craft alkylation reaction.

Q-3 Discuss manufacture of nitrobenzene by continuous process using fortified spent acid and aniline by Bechamp reduction. **[10]**

OR

Q-3 Write a short note on oxy-nitration and various methods of reduction. **[10]**

Q-4 Attempt the following.

(a) Write a short note on various oxidizing agents. **[04]**

(b) Discuss commercial manufacture of benzenesulphonic acid by Barbet process. **[06]**

OR

Q-4 Attempt the following.

(a) Discuss permanganates as an oxidizing agent. **[04]**

(b) Discuss commercial manufacture of acetic acid. **[06]**

Q-5 Attempt the following.

(a) Discuss various methods for chlorination reaction. **[05]**

(b) Discuss commercial manufacture of chlorobenzene. **[05]**

OR

Q-5 Attempt the following.

(a) Write a short note on hardening of vegetable oil. **[05]**

(b) Write a short note on fluorination reaction. **[05]**

Q-6 Attempt the following.

(a) Discuss various types of hydrolyzing agents. **[05]**

(b) Discuss commercial manufacture of ethyl acetate. **[05]**

OR

Q-6 Attempt the following.

(a) Write a short note on transesterification. **[05]**

(b) Discuss catalytic esterification`. **[05]**

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