Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER– III EXAMINATION – SUMMER 2015

Subject Code: 133604 **Date: 27/05/2015**

Subject Name: Chemistry of Intermediates and Colorants - I

Time: 02.30pm-05.00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Write a note on synthesis of naphthayl amine. **07**

(b) Define the following term: **07**

a. Chromophor
b. Auxochrome
c. Primaries
d. Fastness Properties
e. Heterocyclic compound
f. Dyes
g. Pigment

Q.2 **(a)** What is a Dye? How are dyes classified on the basis of method of application? **07**

(b) What happen when Anthracene is treated with, **07**

a. Br_2/CCl_4
b. O_2/V_2O_5 at 500^0C
c. HNO_3/CH_3COOH
d. Na/C_2H_5OH
e. $Na_2Cr_2O_7/H_2SO_4$

OR

(b) Write a note on: Basicity of Pyridine **07**

Q.3 **(a)** How will you syntheses, **07**

a. Tobias acid from β-Naphthol
b. Alizarin from Anthraquinone
c. Tetraline from Naphthalene
d. Benzaldehyde from Benzene
e. Benzyl alcohol from Toluene

(b) How will you prepared following intermediates:

a. Indanthrone yellow 4 GK **03**
b. Solway ultrablue B (anthraquinone acid dye) **04**

OR

Q.3 **(a)** Give the synthesis of following compounds form ethyl acetoacetate **07**

a. Adipic acid
b. Crotonic acid
c. Acetylacetone
d. Acetonylacetone
e. Succinic acid

(b) How will you synthesize; **07**

a. Amino G – Acid
b. Amino J – Acid.

Q.4 **(a)** What is meant by Diazotization reaction? Explain direct diazotization method for suitable scheme. **07**

	(b)	1. Explain Bucherer reaction.	**03**
		2. Give the synthesis of H-acid and K-acid.	**04**

OR

Q.4	**(a)**	Write a note on:	
		a. Electrophilic substitution reaction of Pyridine.	**03**
		b. Nucleophilic substitution reaction of Pyridine.	**04**
	(b)	Write a note on synthesis of typical dyestuff intermediates based on benzene.	**07**
Q.5	**(a)**	Define the term Electrophile & Nucleophile. Explain Nitration of Benzene with mechanism.	**07**
	(b)	How will you prepared anthraquinone? Give its important reaction.	**07**

OR

Q.5	**(a)**	1. Write the structure of Benzene isomer with formula C_8H_{10}.	**03**
		2. Draw the structure of γ-acid and J-acid.	**04**
	(b)	1. What is the proof for the presence of two fused ring in Naphthalene.	**02**
		2. Write a note on: Koch acid.	**02**
		3. Write a note on: Synthesis of Peri acid & Laurent acid.	**03**

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