Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(New) • EXAMINATION – WINTER 2016

Subject Code:2133604 Date:02/01/2017

Subject Name:Chemistry of Intermediates & Colorants-I

Time:10:30 AM to 01:00 PM Total Marks: 70

Instructions:

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

			MARKS
Q.1		**Short Questions**	**14**
	1	Define the term: Chromophor	
	2	Anthracene is treated with, O_2/V_2O_5 at 500^0C , product _____ is formed.	
	3	Give the prerequisites of the true dyes.	
	4	Discuss about hyperchromic shift.	
	5	Draw the structure of γ-acid.	
	6	Give two example of Auxochrome.	
	7	Define the term: Fastness Properties	
	8	What is meant by D.V.S. Ratio?	
	9	Give the type of the intermediate, Solway ultrablue B.	
	10	Draw the structure of J-acid.	
	11	Pyridine has _____ π electron.	
	12	Write the structure of Benzene isomer with formula C_8H_{10} (Only two).	
	13	Anthracene + $Na_2Cr_2O_7/H_2SO_4$ → _____.	
	14	Discuss about stripping.	
Q.2	**(a)**	Explain Reactive dyes with its properties, application and suitable examples	**03**
	(b)	Write down only chemical reactions involved in following conversions: Koch acid → H-acid	**04**
	(c)	Give the classification of dyes based on chemical constitution.	**07**
		OR	
	(c)	Discuss about Amination reaction. Explain the Bucherer reaction with the help of suitable reaction scheme.	**07**
Q.3	**(a)**	How will you syntheses: Tetraline from Naphthalene	**03**
	(b)	Explain Chlorination and Oxidation reaction of methyl group of Toluene	**04**
	(c)	How will you synthesis following compound from ethyl acetoacetate?	**07**

a. n-Butyric acid
b. Succinic acid
c. Acetyl acetone
d. 2,5-Hexanedione
e. Crotonic acid

OR

Q.3	**(a)**	How will you syntheses : Tobias acid from β-Naphthol	**03**
	(b)	Write a note on: Electrophilic substitution reaction of Pyridine.	**04**
	(c)	How do you synthesized of Anthracene by Hawarth method	**07**
Q.4	**(a)**	What is the proof for the presence of two fused ring in Naphthalene	**03**
	(b)	Write a note on: Nucleophilic substitution reaction of Pyridine.	**04**
	(c)	How is pyridine synthesized? How does it react with the following reagents:	**07**

a. KNO_3/H_2SO_4 at 300^0C
b. Fuming H_2SO_4 at 250^0C
c. Br_2 at 300^0C
d. $NaNH_2$ at 100^0C
e. H_2/Ni
f. C_6H_5Li at 100^0C

OR

Q.4	**(a)**	How will you synthesize, Indanthrone yellow 4 GK	**03**
	(b)	Define Electro-donating & Electro-withdrawing group with example.	**04**
	(c)	How will you synthesize following compounds from naphthalene?	**07**

a. α-naphthol
b. β-naphthol
c. α-naphthyl amine
d. β-naphthyl amine
e. Anthranilic acid

Q.5	**(a)**	How will you synthesize: Amino G – Acid	**03**
	(b)	Write a note on: Peri acid & Laurent acid	**04**
	(c)	What is meant by Diazotization reaction? Explain direct diazotization method for suitable scheme	**07**

OR

Q.5	**(a)**	How will you synthesize: Amino J – Acid	**03**
	(b)	Explain the relation between colour and chemical constitution	**04**
	(c)	Discuss hammet substitution constant	**07**

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