

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER- III (New) EXAMINATION – WINTER 2019

Subject Code: 3133604

Date: 5/12/2019

Subject Name: Introduction to colorants

Time: 02:30 PM TO 05:00 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	(a) What is colour? Enlist various colourants.	03
	(b) What are dyes? What are their functions?	04
	(c) Differentiate between dyes and pigments?	07
Q.2	(a) Give limitations of electrophilic substitution reaction.	03
	(b) Discuss about Hammett substitution constant.	04
	(c) Explain the electrophilic substitution reaction with suitable reaction scheme.	07
	OR	
	(c) How do you synthesize the following: (i) Benzene 1,3-disulphonic acid (ii) Naphthalene 2,6 & 2,7 disulphonic acid	07
Q.3	(a) What are acid dyes? Give their applications.	03
	(b) What are extenders? Give their functions.	04
	(c) Give the classification of dyes on the basis of application?	07
	OR	
Q.3	(a) Discuss about active methylene compound with their structural formula.	03
	(b) Discuss about functional group with structural features of organic molecules.	04
	(c) How do you synthesize the following: (i) Koch acid (ii) 1-naphthol-4 sulphonic acid	07
Q.4	(a) What are light primaries? Enlist them.	03
	(b) Explain the applications of pigments.	04
	(c) What is colour blindness? Explain its various forms.	07
	OR	
Q.4	(a) What is additive colour mixing?	03
	(b) Explain the functions of pigments.	04
	(c) With working, principle & diagram, explain Reflectance spectrophotometer?	07
Q.5	(a) Identify the functional group present in following compound: (i) Alkyl Halide (ii) Ketone (iii) Ester.	03
	(b) Discuss Enols with their reaction scheme.	04
	(c) Explain classification of pigments with example	07
	OR	
Q.5	(a) Discuss Enolates with their reaction scheme.	03
	(b) Write down the nitration reaction scheme under electrophilic substitution reaction.	04
	(c) Explain the influence of functional group on following properties with suitable examples: Solubility (ii) Reactivity	07
