Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APRIL / MAY 2024

PRINTING AND PACKAGING TECHNOLOGY
IV Semester
PT 5401 Colour Reproduction
(Regulation 2019)

Time: 3hrs | Max.Marks: 100

CO 1	Represent colour using different colour models and calculate colour difference
CO 2	Explain the principle of colour reproduction, evaluate colour originals and choose appropriate reproduction objective.
CO 3	Infer the influence of substrate and ink properties on colour reproduction.
CO 4	Implement suitable method to control colour in press.
CO 5	Analyze the quality of colour proofs and printed sheets.

BL – Bloom's Taxonomy Levels
(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analysing, L5 - Evaluating, L6 - Creating)

PART- A (10 x 2 = 20 Marks)
(Answer all Questions)

Q. No	Questions	Marks	CO	BL
1	Define Colour.	2	CO1	L1
2	Which properties of light source affect colour perception?	2	CO1	L2
3	Differentiate between CCD and CMOS.	2	CO2	L2
4	What is moire?	2	CO2	L1
5	What are the causes for optical dot gain?	2	CO3	L2
6	Compare between spectral and metameric colour matching systems.	2	CO3	L2
7	What is Profile Connection Space?	2	CO4	L1
8	State the need for colour management system.	2	CO4	L2
9	List the factors influencing selection of proofing system?	2	CO5	L1
10	Which ISO standard is used for gravure process control?	2	CO5	L1

PART- B (5 x 13 = 65 Marks)
(Restrict to a maximum of 2 subdivisions)

Q. No	Questions	Marks	CO	BL
11 (a)	How does eye perceive colours? Explain the various approaches with diagram.	13	CO1	L3
	OR			
11 (b)	Devise a method to standardize observer and derive the tristimulus values.	13	CO1	L3
12 (a)	How do you convert colour using computational and empirical method? Elaborate in detail	13	CO2	L3
	OR			

12 (b)	Describe in detail about the colour reproduction objectives with suitable examples.	13	CO2	L3
13 (a)	Provide an elaborate analysis detailing how the properties of substrates affect the reproduction of colors in printing processes	13	CO3	L4
	OR			
13 (b) (i)	Explain the instrumental colour matching for ink mixing using Kubelka Munk theory.	8	CO3	L4
(ii)	Examine the effect of opacity, tinctorial strength and pigment colour on colour reproduction.	5	CO3	L4
14 (a)	Analyze in detail on any three factors of a printing process affecting quality of colour reproduction.	13	CO4	L4
	OR			
14 (b)	Deduce about the factors that impact the capabilities of printing system such as colour gamut and image resolution.	13	CO4	L4
15 (a) (i)	How does ISO 12647 standards help improve the quality of printing? Explain in detail on how you can make use of the standards.	5	CO5	L3
(ii)	A company wants to upgrade their printing machine with inline colour measurement system. Derive the components for the system, their benefits and criterion for selection.	8	CO5	L3
	OR			
15 (b)	Draw a schematic diagram of a colour control strip and justify the choice and position of each element.	13	CO5	L3

PART- C (1 x 15 = 15 Marks)

(Q.No.16 is compulsory)

Q. No	Questions	Marks	CO	BL
16.	i) Enumerate the types of colour originals that a printer can expect for colour reproduction and suggest the colour reproduction objective to be chosen for each type of original with justification.	8	CO2	L6
	ii) Draw spectral reflectance curves for Cyan, Magenta, Yellow, Black and White.	7	CO1	L6