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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)
B.E. (Full Time) - END SEMESTER EXAMINATIONS, APRIL / MAY 2025
PRINTING AND PACKAGING TECHNOLOGY
VI Semester
PT5603 - GRAVURE AND SCREEN PRINTING
(Regulation 2019)

Time:3hrs

Max.Marks: 100

CO1	Summarize the characteristics of gravure printing process and discuss about the methods of cylinder engraving
CO2	Explain the components and operation of the different types of gravure presses
CO3	Analyze the process characteristics of screen printing technology and relate print quality with the selection of printing components
CO4	Compare the stencil preparation techniques and select the type of screen printing press based on the application requirements
CO5	Apply quality control concepts and solve print problems in gravure and screen printing processes

BL – Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Appling, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No.	Questions	Marks	CO	BL
1	Gravure process is not suitable for jobs with lesser number of impressions. Comment.	2	1	2
2	Why does dynamic imbalance occur in the preparation of gravure cylinder?	2	1	2
3	State the need for undercutting the impression roller used for gravure process.	2	2	1
4	Define wet angle relating to doctor blade positioning in gravure process.	2	2	1
5	How does the angle of movement of the squeegee blade affects the ink filling action ?	2	3	2
6	Mention the components that are essential for screen printing process.	2	3	1
7	How is stencil prepared by tusche and glue method used for screen printing?	2	4	2
8	State the need for fabric abrading in screen printing.	2	4	1
9	What is known as snowflaking?	2	5	1
10	Why does the web break during print and state its remedial action.	2	5	2

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

Q.No.	Questions	Marks	CO	BL
11 (a) (i)	Sketch the different types of well formation adopted in gravure process with its salient features.	5	1	4
(ii)	With diagram, describe the different methods and the procedure for the preparation of image carrier using computers for gravure process.	8	1	3

OR

11 (b) (i)	Correlate the different techniques adopted to reuse the gravure cylinder.	5	<u>1</u>	<u>4</u>
(ii)	Relate the various designs and procedure for the construction of gravure cylinder stating their merits and demerits	8	<u>1</u>	<u>3</u>
12 (a) (i)	With neat diagram, describe in detail about the technical principle of (i) The doctor blade assembly and (ii) Wiping action of the doctor blade.	8	<u>2</u>	<u>4</u>
(ii)	Report the reasons for Impression roller deflection in gravure process and elaborate the methods adopted to overcome deflection.	5	<u>2</u>	<u>4</u>
OR				
12 (b) (i)	Summarize the salient features of any three types of gravure inking system by stating their merits and demerits.	8	<u>2</u>	<u>4</u>
(ii)	With sketches, explain the kinds of press configuration in gravure process mentioning their advantages and disadvantages.	5	<u>2</u>	<u>4</u>
13 (a) (i)	Discuss on the different fabric terminology used for mesh classification in screen printing process.	8	<u>3</u>	<u>3</u>
(ii)	Deliberate on the types of flat substrates used in screen printing process (any three)?	5	<u>3</u>	<u>4</u>
OR				
13 (b) (i)	Relate and report the factors that influence ink passage through the screen and elaborate in detail on blade profile of the squeegee	8	<u>3</u>	<u>3</u>
(ii)	Comment the salient features of different squeegee techniques used to achieve the desired printed result.	5	<u>3</u>	<u>4</u>
14 (a) (i)	Explain the different steps involved in the preparation of photostencil for screen printing by Direct method.	9	<u>4</u>	<u>4</u>
(ii)	Draw and describe the different layers of the film used for stencil preparation by indirect method.	4	<u>4</u>	<u>3</u>
OR				
14 (b) (i)	Briefly explain the different types of screen printing presses with neat sketches (any four)	9	<u>4</u>	<u>4</u>
(ii)	With neat sketch, explain wicket dryer used in screen printing process.	4	<u>4</u>	<u>3</u>
15 (a) (i)	List out the procedure to be followed for maintaining the squeegee used for screen printing process.	5	<u>5</u>	<u>4</u>
(ii)	Explain about the health and safety issues to be followed in Gravure printing presses?	8	<u>5</u>	<u>3</u>
OR				
15 (b) (i)	Briefly discuss on the various environmental issues that occur in a gravure printing press	7	<u>5</u>	<u>4</u>
(ii)	Explain the waste disposal procedure carried out in gravure and screen printing presses.	6	<u>5</u>	<u>3</u>

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16. (i)	Twenty-five lakh copies of biscuit wrappers has to be printed using gravure process. List out the technical requirements with its significance, starting from material selection for gravure cylinder preparation till the wrappers are printed.	9	<u>1</u>	<u>6</u>
(ii)	You are also asked to discuss on the various converting operation to be performed for biscuit wrappers till they are delivered to the supplier.	6	<u>5</u>	<u>5</u>

