

B. E. PRINTING ENGINEERING FIRST YEAR SECOND SEMESTER, 2017

GRAPHIC REPRODUCTION

Time : Three hours

Full Marks : 100

Answer any *FIVE* questions.

- 1.a) "Simple lenses are not used in graphic reproduction." Explain. 5
- b) What do f-numbers printed on the lens body indicate? 2
- c) What is lens flare? How is it eliminated? 2+2
- d) Explain the followings. 3x3=9
- i) Achromat
- ii) Anastigmat
- iii) Apochromat
- 2.a) How the dry gelatin halide emulsion is manufactured? Describe briefly. 10
- b) What do the different parts of a characteristic curve of a film emulsion represent? Discuss in details. 10
- 3.a) What are the basic ingredients of a lith developing solution? How these ingredients contribute to the effective working of the solution? 4+8
- b) Compare among functions of different layers of a black and white process film. 8
- 4.a) What are the basic requirements of a light source for graphic reproduction camera? 3
- b) Describe the different light sources used in printing industry. 17
- 5.a) Why halftones are necessary in planographic process? 4
- b) How does 'penumbra' help the formation of dots of varying sizes in halftone images? Show with supporting diagram. 6

/Turn over

- c) How can you reduce the density of a positive image? 4
d) Why Moire pattern is caused and how it can be eliminated? 3+3

6.a) "Contact screen is simpler and more versatile compared to glass crossline screen."
Explain the statement. 8

b) What sort of special exposure is required in halftone preparation and why? 1+2

c) Why fixing is necessary in film processing? Explain briefly. 3

d) How filter factors are calculated? 6

7.a) Explain why in colour reproduction methods colour correction is a necessity.
Describe any one colour correction technique. 5+5

b) "Indirect method of colour separation films is qualitatively better than direct method of colour separation films." – Justify it with description of these methods along with flowchart. 10

8. Write short notes on any *four* : 5x4=20

- a) Line image
- b) Colour temperature
- c) Gelatin
- d) Screen angle
- e) Black printer