

Bachelor of Printing Engineering Examination, 2017
(3rd Year- 2nd Semester)
Ink Technology

Time: Three hours

Full Marks: 100

Answer any five questions.

1. (a) What is short and long oil alkyd? How it can be derived? Write down the use of medium-oil alkyds. (5)
(b) Write down the physical characteristics of resins and their influence on printing ink. (5)
(c) Define iodine value of an oil. What are the properties that oil imparts in printing ink? Which classes of oils are generally used to make paste ink? Give one example of non drying oil. (7)
(d) What happen if the wax is too soluble in the ink? (2)

2. (a) What happen if the yield value of ink is higher than the shear stress in the duct? (1)
(b) What happen if the index of refraction of pigment and varnish are widely different? (2)
(c) Why flexographic and gravure inks are supplied at a higher viscosity than required for the paper by the ink makers? (2)
(d) Write down the advantages and disadvantages of channel black. (2)
(e) Write down the advantages of horizontal bead mill over vertical bead mill. (2)

3. (a) What happen when first down ink has the lowest tack than the succeeding colors in multicolor printing? (2)
(b) Write short notes on oxidation drying. (2)
(c) How pigment chips are manufactured? Write down its uses. (2)
(d) What is pigment flocculation? How it can be prevented? (2)
(e) Write down the function of resin. What are the advantages of synthetic resin over natural resins? (2)

4. (a) Differentiate between: (i) Pigment and Dye stuff (ii) Liquid ink and Paste ink (iii) Heatset and Quickset drying. (3 X 2 = 6)
(b) Why lithographic inks must be highly pigmented than other inks? (2)
(c) Why plasticizer is used in ink? How plasticizer works? Give one example of plasticizer. (2)
(d) Which form of titanium dioxide is preferred for gravure inks and why? (2)

5. (a) Write difference between drying time and setting time? 4
 (b) Differentiate between acid dye and basic dye. 4
 (c) Which additive is used to promote dispersion of pigment? 3
 (d) Write down the advantages of using organic pigments. 5
 (e) Why Xenon arc is used as a light source for lightfastness test of pigment? 4
 (f) What is ink misting? What are the factors that affect ink misting? 2
6. (a) Write short notes on disperse dyes. 4
 (b) What are the limitations of IGT printability tester? Explain the working of the equipment which is adopted to overcome those limitations. 6
 (c) Why moisture and volatile content of pigment is tested at 105^o temperature? 4
 (d) Write down the advantages and disadvantages of Ball mill. 4
 (e) How dispersion of ink can be measured? 4
7. (a) What is radiation induced drying? Describe any one process briefly. 5
 (b) Briefly describe thixotropy phenomenon of ink. 3
 (c) What is set-off? Write down the factors which influences set-off? 5
 (d) What is tinting? Write down the causes and remedies of tinting. 5
8. Write short notes on: (any five) 5 X 4
- (a) Chromophoric Group
 (b) Paste driers.
 (c) Maleic adduct resins.
 (d) Rotor-stator mixer
 (e) Maleic adduct resins
 (f) Turner bar marking
 (g) Stripping