

Bachelor of Printing Engineering Examination, 2018
(3rd Year- 2nd Semester)
Ink Technology

Time: Three hours

Full Marks: 100

Different parts of the same question should be answered together.

Group 1: Answer any five questions.

5 X 10

1. (a) What is crystallization in printing? How does it affect printing? 4
(b) Why flushed pigments are called flushed pigment? Write down its advantages and disadvantages. 6
2. (a) What happen if the index of refraction of pigment and varnish are widely different? 2
(b) Write down the causes of poor adhesion of dried ink films on substrate. 3
(c) Pigment that bleed into water are unsatisfactory for litho inks - Why? 3
(d) What should be done if opacity is required in a transparent ink? 2
3. (a) What are the important properties oil imparts in printing ink? Give one example of drying and semidrying oil. 5
(b) Why process color printing mostly uses organic pigments? 5
4. (a) Write difference between acid and basic dye. 4
(b) Write down the disadvantages of channel black. 4
(c) Why anatase is preferred in gravure inks? 2
5. (a) How furnace black produced by faster vertical process is better than slow vertical process? 4
(b) What happen if rosin is heated with an oil reactive pure phenolic resin at 150°C? 3
(c) Write down a name of naturally occurring resin obtained from animal resource. 1
6. (a) How alkyd resins are prepared? What are the functions of alkyds in printing ink? 6
(b) How chromophoric group functions in pigment? 4
7. (a) What happen when first down ink has the lowest tack than the succeeding colors in multicolor printing? 5
(b) How plasticizers make dried ink film more flexible? Give two examples of plasticizers used in printing ink. 5
8. Write down the physical characteristics of resins and their influence on printing ink. 10

Group 2: Answer any four questions.**4 X 5**

1. Write down the advantages of horizontal bead mill over vertical bead mill. 5
2. Write down the advantages and disadvantages of Ball mill. 5
3. How pigment chips are manufactured? Why are they mostly used for preparing liquid inks for packaging? 5
4. Describe briefly a typical cooking cycle that takes place during the manufacture of high gloss varnish used in a lithographic ink. 5
5. Write down the general procedure to get proper pigment dispersion. 5

Group 3: Answer any three questions.**3 X 5**

1. What are the factors that affect drying time of an oleoresinous system? How drying time of the same can be tested? 5
2. (a) How dispersion of ink can be measured? 4
(b) Why Xenon arc is used as a light source for lightfastness test of pigment? 1
3. What are the limitations of IGT printability tester? Explain the working of the equipment which is adopted to overcome those limitations. 5
4. What are the resistance tests performed on pigment? Explain any one. 5

Group 4: Answer any three questions.**3 X 5**

1. What are the causes and effects of streaking problem in gravure printing? 5
2. What is ink misting? What are the factors that affect ink misting? 5
3. Write down the causes and effect of tinting? 5
4. What is bubbling and feathering problem in screen printing? How these can be prevented? 5
5. What is carryover piling? Write down its causes and remedies. 5