

B. PRINT. ENGG. FINAL EXAMINATION 2006

1st Semester

COMPARATIVE PRINTING THEORIES

Time : Three hours

Full Marks : 100
(50 marks for each part)

Use a separate Answer-Script for each part.

PART-I

Answer Question No. 1 any *one* from the rest.

1. Answer any *five* : 5×6=30
- a) Why ink-makers supply much higher viscosity inks than that used in flexographic and gravure printing press ?
 - b) Which type of viscometer is convenient to ink manufacturer's requirement and why ?
 - c) Mention the characteristics of dilatant substances with its rheological equation.
 - d) What kind of rheological material would ink having a high proportion of pigment be ? State its rheological equation and rheogram.
 - e) Mention the rheological characteristics of thixotropic substances. What do you mean by 'false-bodied material' ?

[Turn Over]

(2)

- f) Differentiate between capillary viscometer and rotational viscometer.
 - g) Deduce the rheological equation for a viscoelastic substance.
2. a) State the principle of co-axial cylindrical viscometer. Deduce the basic functional relationship of it and also mention its various limitations.
- b) State the principle of cone and plate type viscometer with neat sketch. How can you determine the flow curve using this principle ? 10+10
3. a) Determine the velocity distribution when a highly pseudo-plastic substance is flowing through a capillary tube and also show the variation of rate of deformation across the tube for the above.
- b) What do you mean by normal stress effect of visco-elastic substance ? 16+4

PART-II

Answer Q. 4 and any *two* of the others.

4. a) What are the major situations when the offset plate fails to perform in press ? 2½
- b) Why waterless printing can give higher print contrast than conventional offset ? 2½

(3)

- c) For small offset presses, what are commonly used as plates or masters ? 2½
- d) What is moire pattern ? 2½
5. a) Give the special characteristic features used to identify different printing processes. 7
- b) What is registration ? What happens during registration? 6
- c) Write about the temperature control system used in driography. 7
6. a) Compare between the following problems :-
(i) Curl and crease
(ii) Picking and Hickies. 5
- b) What is security printing ? How are bank cheques printed ? 5
- c) Give a comparison between conventional and waterless offset printing. 10
7. a) Give a comparative study between Gravure and silk screen printing. 7
- b) What is air-conditioning ? Why is it required in the press ? 6
- c) Write a short note on Toroy Waterless printing system. 7

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