

B. E. PRINTING ENGINEERING 4th YEAR EXAMINATION, 2013
(1st Semester, Supplementary)
NON-IMPACT PRINTING

Time: Three hours

Full marks: 100

Answer any 4 questions

1. a) Describe in detail the basic steps of xerographic process with required diagrams. 20
 c) Name different commonly used photoreceptors in xerography with their spectral responding characteristics. 5
2. a) Write notes on the following development processes 15
 i. Cascade development
 ii. Magnetic brush development
 iii. Impression cylinder development
 b) Briefly describe the working principle of binary deflection DOD printing. 7
 c) How does triboelectricity phenomenon play important role in xerography? 3
3. a) Describe the thermal transfer printing process with required diagrams. 8
 b) Describe the importance of development electrode. 6
 c) Describe few ink related problems commonly occur in inkjet printing. 6
 d) Briefly describe the composition of ink-jet ink. 5
4. a) Describe the working principle of multiple deflection continuous jet inkjet printing with required diagram. 10
 b) What is supply efficiency η ? Derive the relationship between the discharge rate and η . 15
5. a) Describe the principle of piezo-electric type DOD inkjet and the different designs that are commonly used in this type of DOD inkjet printers. 12
 b) Describe thick and thin film print head? 8
 c) State the advantages and disadvantages of indirect thermal printer in comparison with direct thermal printer. 5
6. a) Describe different components of an inkjet printhead with required diagram. 8
 b) How satellite drops are formed? What are the advantages and disadvantages associated with this phenomenon? 9
 c) Describe different phases of PIDC. 8