

Ex/PRN/PC/B/T/424/2022
B.E. PRINTING ENGINEERING FOURTH YEAR SECOND SEMESTER EXAM 2022
QUALITY CONTROL IN PRINTING INDUSTRY

Time: 4hrs

Full Marks: 70

CO1, CO2 , CO3 and CO4 (Answer any two of the following questions)

1. What is the importance of quality control in Printing and Packaging Industry? Discuss the difference between defect prevention and defect detection. Describe how the control chart helps in quality assurance of industry with suitable graphs (Under control and out of control). Briefly describe the utilization of check sheets and histogram in the printing and packaging industry with suitable examples. [3 +2 + 5+(5+5)=20]

2. Discuss about key elements of six sigma. What is statistical Process control ? Briefly describe Measure Phase and Analyze phase. [7+ 3+10=20]

3. Draw the flowchart with necessary symbols to achieve a cost effective package prints (using gravure /flexo press). Briefly explain the benefits of flowchart. Draw the typical viscosity/time plots for a thixotropic system. What are rheological parameters controlled in quality of oil inks and Why? [(7+3)5+5=20]

CO1 and CO5 (Answer any two of the following questions)

4. What are the standards used for testing in printing and packaging process. Discuss the drawback of PIRA ink drying time tester. Explain the importance of following print performance test for film and foil printing: cold seal packaging, ii) non-curl and iii) odour and taint . Why do you think that the friction of film to film and film to metal are important factors in processing packaging materials? (3+2+6+4=15)

5. Short Note : Critical to Quality Characteristics, Relative density, Radiation curing products , (5X3=15)

6. How do infrared spectroscopy and refractive index help in testing of varnishes and oil? How will you select the viscosity measurement instruments for testing ink and what are the specifications followed to measure viscosity? Define yield value, Trapping and aromatic content (3+3+3+6=15)