

SUPPLEMENTARY Ex/PRN/PC/B/T/424/2023(S)  
**B.E. PRINTING ENGINEERING FOURTH YEAR SECOND SEMESTER EXAM 2023**  
**QUALITY CONTROL IN PRINTING INDUSTRY**

Time: 3hrs

Full Marks: 100

**(CO1, CO4) Qs. No 1 is compulsory**

1. After a test following samples are obtained:

2 4 4 5 13 9 10 11 6 11

5 8 8 7 9 14 4 6 11 12

Explain with the control chart plot and describe how the control chart helps in quality assurance in industry. Why do you use Pareto chart? Discuss the difference between Histogram and Pareto chart.

[ (7+6)+3+4=20 ]

**(CO1, CO2, CO4) Answer any two of following questions:**

2. What is the importance of histogram in Printing and Packaging industry? Justify your answer with suitable example? What is SPC? What are the benefits of applying Cause and effect diagram? Justify your answer with suitable example used in any printing press

[ (2+4) +2+(5+7) =20 ]

**OR**

3. Draw the flowchart with necessary symbols to achieve a cost effective flexible package prints. Briefly explain the utilization of check sheet scattered diagram with suitable example. Define quality assurance.

[ 8+ (5+5) +2=20 ]

4. How will you correlate Six Sigma in quality control? Explain DMAIC methodology used in Six Sigma. What are the five specific types of analysis in six sigma. Briefly explain the Define phase of Six Sigma. What are the key roles of Six Sigma implementation for quality management?

[ 4+4+8+4=20 ]

**OR**

5. Short Note on :

[ 4X5=20 ]

i) DPMO ii) Inkfly iii) Densitometry iv) Preflight v) Setting time

**CO3, CO5 and CO6 (Answer any two of following questions)**

6. Explain the thixotropy at different shear rates. Explain viscosity for a thixotropic system. Discuss the rheological parameters of oil inks for short term testing? Mention the name of instruments for viscosity measurement depending on the rheological nature of the ink.

[ 5+5+8+2=20 ]

[ Turn over

7. What are test methods used in quality control of solvents and briefly explain how the test is done? Briefly explain the drawbacks in remote proofing document management? Discuss about the thermal wax proofer. What is job ticketing and tracking? [(2+5) +6+3+4 =20]

8. Explain the importance of following print performance test for paper, film and foil printing: i) Abrasion resistance, ii) slip resistance iii) cold seal packaging and iv) odor and taint v) Curl

[4X5=20]