

Total number of printed pages-3

53 (IE 812) ICPI

2017

**INSTRUMENTATION AND CONTROL IN
PAPER INDUSTRY**

Paper : IE 812

Full Marks : 100

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

1. (a) Mention the important objectives of process control. What is meant by self regulation? 10
- (b) Explain the steps followed in paper making process with neat Block diagram. 10
2. Discuss in detail the mechanical and chemical pulping process. Compare their merits and demerits. 20
3. (a) What are the impact of effluents, needed treatment and its disposal in paper industry? 10

Contd.

- (b) Write short note on demineralised water plant and power generation in paper industry. 10
4. (a) Enumerate the construction and working principle of *any two* types of flow and level sensors. 12
- (b) Explain the hardware used to monitor and control the pH of the pulp. 8
5. Explain with necessary diagrams the working of Digester liquor feed pump controller and condensate conductivity control. 20
6. (a) Explain the operation of Basis Weight Control used in paper industry with a neat piping and instrumentation diagram. 10
- (b) Explain the importance of interlocking protection in paper industry. 10
7. (a) What are the technical considerations and specifications to select AI, DI, Earthing and grounding? 10

(b) What are the various components of Industrial Control System (ICS). Explain its operation. 10