

Total number of printed pages-3

53 (IE 812) ICPI

2018

**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.***

Answer any five questions out of eight.

- (a) Draw the Functional block details of pulping and paper making. Explain it. 10

(b) What are the conventional and non-conventional raw materials for paper manufacture ? Give the grades and properties of paper. 10
- (a) Explain the impact of effluents and need for treatment, disposal in paper making process. 10

Contd.

- (b) Write short note on the bleaching process in paper making. 10
3. Discuss in detail the Mechanical and Chemical pulping process. Compare their merits and demerits. 20
4. Write short notes on the following measuring methods with suitable examples : 20
- (i) Flow
 - (ii) Level
 - (iii) DRP
 - (iv) Consistency.
5. Explain with necessary diagrams the working of Digester liquor feed pump controller and dissolving tank density 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 with necessary diagrams the working of white liquor flow controller. 10

7. Write short notes on the following :

4×5=20

(i) Basic SCADA Communication topologies

(ii) Alarm Management

(iii) Standards of PC based control system

(iv) DCS

8. (a) Discuss the models for minimum variance control used in Paper industry.

10

(b) Explain the Functional Blocks of a batch control system.

10

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- (ii) Alarm Management
- (iii) Standards of PLC based control system
- (iv) DCS

8. (a) Discuss the models for minimum variance control used in Paper industry. 10
- (b) Explain the functional blocks of a batch control system. 10

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(b) Explain the functional blocks of a batch control system. 10