Paper Code: PS03CINS03	Total Credit: 4
Title Of Paper: Programmable Logic Controllers & DCS	

Unit	Description in detail	Weightage (%)
I	PLC: Advantages-Disadvantages, Overall System, Central Processing Unit, Input-Output Module Interfaces & Programming Formats, Construction of Ladder Diagrams, Scanning Considerations & Operational Faults, Input-Output On/Off Devices, Input-Output Analog Devices, PLC Input Instructions	25%
II	Outputs: Coils & Indicators, Operational procedures, Contact and Coil I-O Programming Examples, Digital Logic Gates, Boolean Algebra PLC Programming, Conversion Examples, Ladder Diagrams and Sequence Listings, Large-Process Ladder Diagram Construction	25%
III	Flowcharting as Programming Method, General Characteristics of Registers, Module Addressing, Holding Registers, Input-Output: Single & Group Registers, Timer Functions & Examples, Counter Functions & Examples, Intermediate Functions, Data Handling Functions, Sequencer Functions, Types of PLC Analog Modules & Systems, PLC Analog Output Applications	25%
IV	Overview of Distributed Control System (DCS), EFMS Field Monitoring Station, Configuration of EFMS Field Monitoring Station, EFMS Field Monitoring Station Functions, Input Indication Functions, Annunciator Functions, Sequence Control Functions, Computational Functions.	25%

Basic Text & Reference Books:-

- Programmable Logic Controllers- Principles and Applications, John W. Webb & Ronald A. Reis, Prentice Hall of India Private Limited.
- Yokogawa Manual
- Computer-Aided Process Control, S. K. Singh, Prentice Hall of India Private Limited.
- Programmable Logic Controllers-Programming Methods and Applications, John R. Hackworth & Frederick D. Hackworth, Jr.
- Computer based Industrial Control, Krishna Kant, Prentice Hall of India Private Limited.