

Code: 9A02805

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B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

PLC & DCS – ITS APPLICATIONS
(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Explain about I/O modules and interfacing and the devices connected to I/O module.
- 2 Discuss about the operational procedures in PLC programming.
- 3 Explain construction of ladder diagrams.
- 4 (a) Explain in detail about module addressing mode.
(b) What are the characteristics of registers?
- 5 Explain about arithmetic functions.
- 6 Explain about function with examples and applications:
(a) FAL
(b) ONS
(c) CLR
- 7 (a) Explain importance of DCS.
(b) Comparison between PLC and DCS.
- 8 Explain DCS application in chemical industries.

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Answer any FIVE questions
All questions carry equal marks

- 1 Explain about the following:
 - (a) PLC system
 - (b) CPU processor
- 2 What are the programming examples in PLC programming using contacts and coils?
- 3 Explain about programming in Boolean algebra system. Also explain in the conversion examples.
- 4
 - (a) Explain in brief about analog module and system.
 - (b) What is the purpose of analog signal processing and multi bit data processing?
- 5 Explain about arithmetic functions.
- 6 Explain different data handling functions and their applications.
- 7 Explain different architectures of DCS.
- 8 Explain DCS application in pulp industries.

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Answer any FIVE questions
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- 1 Explain construction of ladder diagrams.
- 2 Explain briefly about drill press operation.
- 3 Mention different logic gates and explain them briefly.
- 4 Explain in brief about input registers, output registers and holding registers.
- 5 Explain about counters and counter functions in industrial applications.
- 6 Explain about the functions with examples and applications:
 - (a) Master control relay
 - (b) SKIP
 - (c) FIFO
- 7 Explain the advantages with DCs and explain engineering interface.
- 8 Explain list of applications of DCs and explain any one application clearly.

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Answer any FIVE questions
All questions carry equal marks

- 1 Explain the following:
 - (a) Programming equipment
 - (b) Programming formats
- 2 What are the input instructions in PLC programming and also explain the outputs in PLC programming.
- 3 Explain construction of ladder diagrams.
- 4 Explain in details about PLC registers and also mention their applications.
- 5 Explain about timer functions and industrial applications.
- 6 Explain about the functions with examples and applications.
 - (a) Master control relay
 - (b) SKIP
 - (c) FIFO
- 7 Explain DCS logical control unit.
- 8 Explain iron and steel plant application for DCS.
