

**B.TECH. SEM -VI ELECTRICAL 2014 COURSE (CBCS) :**  
**SUMMER - 2018**  
**SUBJECT : ELECTIVE – II: PROGRAMMABLE LOGIC CONTROLLERS**

Day : **Monday**  
Date : **11/06/2018**

**S-2018-2418**

Time : **02.30 PM TO 05.30 PM**  
Max. Marks : 60

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

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- Q.1** a) What do you mean by PLC system and its components? [05]  
b) Draw necessary block diagram of PLC and explain. [05]

**OR**

- a) How do you explain about evolution in PLC ? [05]
- b) What are major manufacturing companies of PLC and state terminologies they use? [05]

- Q.2** a) What corrective procedures are to be taken while construction of PLC ladder diagram? [05]  
b) What do you mean by Rail and Rung? Draw necessary diagrams. [05]

**OR**

- a) Explain AND logic gate with truth table and also verify that with necessary ladder diagram. [05]
- b) Explain OR logic gate with truth tables and also verify that with necessary ladder diagram. [05]

- Q.3** a) What do you mean by variable speed AC motor drive? [05]  
b) What are advanced PLC functions? [05]

**OR**

- a) What are advantages of PLC system over conventional relay logic? [05]
- b) What do you understand by AC motor starter? [05]

- Q.4** a) What are different applications of SCADA? [05]  
b) What are different functions of SCADA? [05]

**OR**

- a) How do you differentiate RTU and MTU? [05]
- b) What do you mean by PLCC in relation with SCADA? [05]

- Q.5** a) What do you mean by Monolithic architecture of SCADA? [05]  
b) What do you understand by networked architecture of SCADA? [05]

**OR**

- a) How do you explain SCADA systems in critical infrastructure? [05]
- b) What do you mean by Energy Management System? [05]

- Q.6** How do you explain security implications of SCADA protocols? [10]

**OR**

- How do you explain Profibus and Modbus with examples? [10]

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