

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name : Control System Architecture

Subject Code : 4TE08CSA1

Branch: B.Tech. (IC)

Semester : 8

Date : 12/04/2017

Time : 02:30 To 05:30

Marks : 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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Q-1

Attempt the following questions:

(14)

- 1) LD means
A) Logic Diagram B) Line Diagram C) Ladder Diagram D) Logic Delay
- 2) Passenger reservation is a example of
A) DCS B) CCS C) SRTS D) RTOS
- 3) Analog I/O interfacing standards
A) 0-24 V DC B) 4-20 mA C) 0-100 % D) None of them
- 4) Which controller are used for localized process
A) PC based controller B) Programmable Logic Controller C) Programmable Automation Controller D) Remote Terminal Unit
- 5) Fluctuating signal is a.....signal
A) Pulse B) Analog C) Digital D) All
- 6) Higher-level Programming covered..... Standard.
A) IEC 61131-3 standard B) IEC 8652:2012 standard C) IEC 8652:1995 standard D) IEC 1113-1 standard
- 7) RTU means
A) Real Time Unit B) Remote Technical Unit C) Remote Terminal Unit D) None of them
- 8) SMART means
A) Super Motion And Real Time B) Self Mounting Analysis Regenerating Technology C) Self Monitoring Analysis Reporting Technology D) Supervisory Motion And Real Time



- 9) What is Self-Supervision?
- 10) What is the function of Alarm system?
- 11) What is Communicability?
- 12) What is Soft Real Time System?
- 13) Define: Rack.
- 14) What is Operator Station?

Attempt any four questions from Q-2 to Q-8

Q-2	Attempt all questions	(14)
a)	With neat sketch explain the function of each layer in the Software structure of the controller.	07
b)	Give comparison between Operator station and Mimic panel. State the advantages and disadvantages of Operator stations.	07
Q-3	Attempt all questions	(14)
a)	Discuss various Standby schemes in brief.	07
b)	Explain Watchdog module of processor subsystem.	07
Q-4	Attempt all questions	(14)
a)	Discuss the structure of Control Subsystem and explain various steps performed by it.	07
b)	Brief about Higher level programming languages, Explain Functional Block Diagram in detail.	07
Q-5	Attempt all questions	(14)
a)	Draw the physical and logical structure of Distributed Process and explain in detail.	07
b)	Write short note on HAZOP.	07
Q-6	Attempt all questions	(14)
a)	Explain the following term for DCS controller configuration (i) Regulatory PV point, (ii) Regulatory control point.	07
b)	Explain Field bus Input - Output with merits & demerits.	07
Q-7	Attempt all questions	(14)
a)	Write a short note on Isolation and Protection in automation system.	07
b)	Discuss Basic and Mimic Approaches of constructing human interface panels.	07
Q-8	Attempt all questions	(14)
a)	Explain “Hybrid control-Two step with dead band” automation strategy with an example.	07
b)	Briefly explain The components of a SCADA system.	07

