University of Mumbai

Sample Question paper

Program: **Electronics Engineering**
Curriculum Scheme: Rev2016
Examination: BESemesterVII
Course Code: ELX701and Course Name:Instrumentation System Design
Time: 2 hour Max. Marks: 80

Q1. **(40 Marks)**	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Poor flow control is the major disadvantage of --------valve
Option A:	Gate
Option B:	Globe
Option C:	Needle
Option D:	Check
2.	Fail safe operation is an important advantage of
Option A:	Electrical actuators
Option B:	Electronic actuators
Option C:	Hydraulic actuators
Option D:	Pneumatic actuators.
3.	A disc attached to the shaft is used in the construction of
Option A:	Butterfly valve
Option B:	Ball valve
Option C:	Gate valve
Option D:	Needle valve
4.	The function of telemetry system is
Option A:	Amplification of received data.
Option B:	Attenuation of received data
Option C:	Measurement of data
Option D:	Removal of noise and distortion.
5.	Data transmission format in telemetry is
Option A:	4-20 mA
Option B:	4-30 mA
Option C:	4-20 A
Option D:	4-20 micro A
6.	Main Advantage of 2 wire transmitter is -
Option A:	Low power consumption
Option B:	Low cost
Option C:	Less effect of noise and distortion
Option D:	Simple circuit.
7.	By addition of LVDT assembly to flapper nozzle, complete system can act as
Option A:	Pressure to current converter
Option B:	Pressure to power converter.

Option C:	Pressure to voltage converter
Option D:	Pressure to displacement converter.
8.	Which type of system belongs to ON-OFF CONTROLLER?
Option A:	Continuous
Option B:	Discontinuous
Option C:	Digital
Option D:	Composite
9.	A process control system consists of _____
Option A:	10 elements
Option B:	6 elements
Option C:	2 elements
Option D:	4 elements
10.	Which refers to the time for the process control loop to make necessary adjustments to the final control element?
Option A:	Control lag
Option B:	Process lag
Option C:	Dead Time
Option D:	Error
11.	The deviation of controlled variable from the setpoint is called_____.
Option A:	Error
Option B:	Dead Time
Option C:	Process Lag
Option D:	Control Lag
12.	Which of the following cannot be an input that is given to the PLC?
Option A:	Push button
Option B:	Encoder
Option C:	Sensor
Option D:	Control relay
13.	A proportional band setting of 175% is equivalent to a gain setting of.
Option A:	175
Option B:	0.756
Option C:	0.571
Option D:	1.32
14.	Advantage of using multiplexer in later stage of DAS is
Option A:	Speed of DAS is high
Option B:	Simple system
Option C:	Cost of system is less
Option D:	Accuracy
15.	Which of the following is NOT a standard interface
Option A:	RS 232 C
Option B:	RS 422 A
Option C:	RS 485

Option D:	RS 100
16.	Which of the following statement is NOT correct?
Option A:	Data logger can be called as DAS but DAS is not necessary as data logger
Option B:	Data logger is a standalone device
Option C:	Data logger can be powered by solar energy
Option D:	DAS is portable .
17.	Due to the effect of loading
Option A:	Output voltage gets decreased
Option B:	Output voltage is increased.
Option C:	There is no effect on output voltage.
Option D:	Output voltage remains constant.
18.	What is the expansion for DAQ?
Option A:	Data Acquisition System
Option B:	Data Acquiring System
Option C:	Data Allied System
Option D:	Data Acquisition Software
19.	Accreditation bodies conduct laboratory assessments:
Option A:	Against ISO/IEC 17025 alone
Option B:	Against ISO 9001 alone
Option C:	Against ISO/IEC 17011 and ISO/IEC 17025
Option D:	Against ISO/IEC 17025 and other accreditation requirements documents
20.	What does LabVIEW stand for?
Option A:	Laboratory Viewpoint
Option B:	Learning Based Viewpoint
Option C:	Laboratory Virtual Instrumentation Engineering Workbench
Option D:	Learning Virtual Instrumentation Engineering Workbench

Q2. **(20 Marks)**	**Solve any Two out of Three.10 marks each**
A	Draw basic pneumatic system and describe its components.
B	What is Transmitter? Give the classification details of transmitter? Draw and explain the process loop with transmitter.
C	List any five SAMA symbols. Draw clear symbol with brief description.

Q3. **(20 Marks)**	**Solve any Two out of Three.10 marks each**
A	Draw the basic structure of PLC and describe its components in detail.
B	What is the need of composite controller? Explain PI Controller in detail.
C	What is a Data Acquisition System (DAS)? Describe, with clear diagram, working of a typical DAS.