

These are sample MCQs to indicate pattern, may or may not appear in examination

University of Mumbai

Online Examination 2020

Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: MEC605 and Course Name: Mechatronics (MTRX)

Time: 1hour

Max. Marks: 50

Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	This level of Mechatronics attempts to improve smartness a step ahead by introducing intelligence and fault detection and isolation capability into the system
Option A:	Primary Level Mechatronics
Option B:	Secondary Level Mechatronics
Option C:	Tertiary Level Mechatronics
Option D:	Quaternary Level Mechatronics

Q2.	In the architecture of Mechatronics System, the Sequencing and timing operations are considered in the _____ block
Option A:	Input signal Conditioning and Interfacing
Option B:	Digital Control Architecture
Option C:	Actuators
Option D:	Graphical Display

Q3.	Identify the correct sequence of activities in the Modelling/Simulation phase of Mechatronics Design Process.
Option A:	Recognition of Need-Sensor and Actuator selection-control system design-design optimization
Option B:	Recognition of Need-control system design-Sensor and Actuator selection-design optimization
Option C:	Recognition of Need-design optimization-Sensor and Actuator selection-control system design

Option D:	Recognition of Need-Sensor and Actuator selection-design optimization-control system design
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Q4.	What is the purpose of A/D converter?
Option A:	Converting digital to mixed signal mode
Option B:	Converting analog to mixed signal mode
Option C:	Converting digital to analog
Option D:	Converting analog to digital

Q5.	In parallel communication interface, how the data is transmitted?
Option A:	one line is used for each bit.
Option B:	single line is used to transmit data in sequential bits
Option C:	multiple lines are used to transmit data in sequential bits
Option D:	two lines are used for each bit.

Q6.	_____ is the operator window of the supervisory system in SCADA
Option A:	Remote Terminal Units
Option B:	Supervisory computers
Option C:	Human Machine Interface
Option D:	Master Station

Q7.	_____ is a peripheral integrated circuit providing parallel I/O interfacing for microprocessor systems
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Option A:	Remote Terminal Units
Option B:	Peripheral Interface Adapter
Option C:	Supervisory computers
Option D:	universal asynchronous receiver/transmitter

Q8.	_____ is a fast switch that sequentially scans numerous input-signal channels and directs them in a preprogrammed manner to a single ADC for digitizing
Option A:	Multiplexer
Option B:	Digital to Analog Converter
Option C:	Remote Terminal Units
Option D:	Human Machine Interface

Q9.	Digital-to-analogue conversion is
Option A:	very complex to achieve than analogue-to-digital conversion
Option B:	equally complex to achieve than analogue-to-digital conversion
Option C:	much simpler to achieve than analogue-to-digital conversion
Option D:	complicated to achieve than analogue-to-digital conversion

Q10.	The system is behaving as a _____ filter if it is rejecting small particles.
Option A:	low pass filter
Option B:	high pass filter
Option C:	band pass filter

Option D:	band stop filter
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Q11.	In pick and place robots, select the appropriate function of controller.
Option A:	For holding a piece or tool
Option B:	Move the manipulator arm and end effector
Option C:	Determine Number of degrees of freedom of movement
Option D:	Delivering commands to the actuators

Q12.	The Robot designed with Polar coordinate systems has_____
Option A:	Three linear movements
Option B:	Three rotational movements
Option C:	Two linear and one rotational movement
Option D:	Two rotational and one linear movement

Q13.	More torque will be required for the DC shunt motor in case of
Option A:	Air blower
Option B:	Fan
Option C:	Flywheel
Option D:	Oil Pump

Q14.	The permanent magnet for PM motors is prepared from
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Option A:	Alnico & Rare earth
Option B:	Copper
Option C:	Bronze
Option D:	Lead

Q15.	The fullform of VR in case of motors is
Option A:	Varying resistance
Option B:	varying reliability
Option C:	Variable reluctance
Option D:	Variable ratio

Q16.	The valve which can be used for giving delay in the process
Option A:	3/2 Valve
Option B:	AND valve
Option C:	Shuttle valve
Option D:	Time delay valve

Q17.	Input to OR valve can be given by
Option A:	Two 4/2 Valve
Option B:	Two 2/2 Valve
Option C:	Two 5/2 Valve

Option D:	One AND valve
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Q18.	AND valve has ___ input ports & ___ output port
Option A:	1 & 2
Option B:	2 & 1
Option C:	2 & 2
Option D:	1 & 1

Q19.	Select equipment used to compress/pressurise Liquid
Option A:	Compressor
Option B:	Pump
Option C:	Motor
Option D:	Blower

Q20.	What is the range of working pressure in pneumatic system
Option A:	3-4 bar
Option B:	7-8 bar
Option C:	9-10 bar
Option D:	14-15 bar

Q21.	OR logic gate condition in PLC system can be achieved by considering
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Option A:	Two coils in Series
Option B:	Two coils in series
Option C:	Two contacts in parallel
Option D:	Two contacts in series

Q22.	When PLC connections are used instead of electrical connections, the order of operations to be performed can be interchanged by
Option A:	changing hardwired connections
Option B:	changing sequence of program
Option C:	changing component valves of the system
Option D:	changing sensors of the system

Q23.	What is the meaning of NC valves?
Option A:	Not closed
Option B:	Normally closed
Option C:	Not Certain
Option D:	Nominal Closed

Q24.	Which ports of 5/3 valves are Output ports?
Option A:	1 & 3
Option B:	1 & 5
Option C:	2 & 4

Option D:	3 & 5
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Q25.	How many output ports are there in 3/2 Valve?
Option A:	1
Option B:	2
Option C:	3
Option D:	4