Program: BE Mechanical Engineering

Curriculum Scheme: **Revised 2016**/~~2012~~

Examination: Third Year Semester VI

Course Code: MEDLO6021 and Course Name: MTRX

Sample Questions are only for Reference and may/may not appear in the final exam.

Time: 1 hour   Max. Marks: 50

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

Q1.	What does the abbreviation PLC indicate in Industrial Automation ?
Option A:	Programmable Logic Controller
Option B:	Programmed Logic Controller
Option C:	Programmed Loading Component
Option D:	Programmable Logical Component
Q2.	Which of the following is a kind of input to the PLC?
Option A:	Motor
Option B:	Push Button
Option C:	Solenoid valve
Option D:	Lamp
Q3.	Which of the following is a kind of Output device for the PLC?
Option A:	Push Button
Option B:	NC Switch
Option C:	Motor
Option D:	Toggle Switch
Q4.	Which of the following is correct statement with respect to the ladder programming?
Option A:	Vertical line on left side is neutral rail
Option B:	Vertical line on left side is Power rail
Option C:	Vertical line on right side is Power rail
Option D:	Vertical line on left side is rung of ladder
Q5.	In the ladder program, which symbol is used to indicate the motor?
Option A:	Two vertical lines
Option B:	Two Vertical lines with a slanting line in between
Option C:	A circle
Option D:	A square
Q6.	Which is the following is not a programming method for PLC?
Option A:	Ladder Logic Programming

Option B:	Sequential Function Charts
Option C:	Structured Text Programming
Option D:	Stepped programming
Q7.	The ladder logic is stored and processed at:
Option A:	Input Terminal of PLC
Option B:	Output Terminal of PLC
Option C:	Programming Device
Option D:	CPU
Q8.	The term "NO Switch" indicates:
Option A:	Normally Open Switch
Option B:	Normal Operated Switch
Option C:	Normally Oriented Switch
Option D:	Never Operated Switch
Q9.	If two NO Switches are connected in series on a rung in the Ladder program, it indicates:
Option A:	AND Gate
Option B:	OR Gate
Option C:	XOR Gate
Option D:	NOR Gate
Q10.	Which of the following sensor uses currents induced by magnetic fields to detect nearby metal objects ?
Option A:	Capacitive Sensor
Option B:	Inductive Sensor
Option C:	Mechanical Sensor
Option D:	Optical Sensor
Q11.	If two NO switches are to be used in ladder program such that activating any one of them or both should be able to actuate the motor; Which of the following Logic Gate is suitable?
Option A:	AND Gate
Option B:	OR Gate
Option C:	NOT Gate
Option D:	NAND Gate
Q12.	A timer which will wait for a set time after a line of ladder logic has been true before turning ON, but it will turn OFF immediately is called as:
Option A:	Off delay Timer
Option B:	On delay Timer
Option C:	Delayed Timer
Option D:	Delayed Off Timer
Q13.	If two NO switches are to be used in ladder program such that activating both of them is essential to actuate the motor; Which of the following Logic Gate is suitable?

Option A:	AND Gate
Option B:	OR Gate
Option C:	NOT Gate
Option D:	NAND Gate
Q14.	If two NO switches are to be used in ladder program such that activating only one of them is essential to actuate the motor; Which of the following Logic Gate is suitable?
Option A:	AND Gate
Option B:	XOR Gate
Option C:	NOT Gate
Option D:	NAND Gate
Q15.	A logical operator that yields a logic 1 output if any input is logic 0 and a logic 0 output if all inputs are logic 1 is called as
Option A:	AND Gate
Option B:	NOR Gate
Option C:	NOT Gate
Option D:	NAND Gate
Q16.	A logical operator that yields a logic 1 output if all inputs are logic 0 and a logic 0 output if any input is logic 1 is called as
Option A:	AND Gate
Option B:	NOR Gate
Option C:	NOT Gate
Option D:	NAND Gate
Q17.	A logical operator that yields a logic 1 output if a logic 0 is entered at the input and a logic 0 output if a logic 1 is entered at the input is called as
Option A:	AND Gate
Option B:	NOR Gate
Option C:	NOT Gate
Option D:	NAND Gate
Q18.	Determine the Natural frequency of Oscillation for a certain second order system if the value of Peak Time is 2 second and the damping ratio is 0.5
Option A:	1.812 rad/s
Option B:	2.812 rad/s
Option C:	3.812 rad/s
Option D:	0.812 rad/s
Q19.	DAC is the abbreviation used for:
Option A:	Direct Analog converter
Option B:	Digital and Analog connections
Option C:	Digital to Analog Converter
Option D:	Digital to Analog Compatibility

Q20.	Which two numbers are used by binary numbering system?
Option A:	0 & 1
Option B:	1 & 2
Option C:	0 & 2
Option D:	0 & 9
Q21.	What is the necessary condition of the Routh's Criteria
Option A:	All of the coefficients of the pollynomial should have same sign.
Option B:	The coefficients must have combination of positive and negative signs.
Option C:	All the coefficients of the polynomials should be zero.
Option D:	All the coefficients should be same.
Q22.	When one can say system is stable?
Option A:	When all roots are lying in Right Half of S-Plane
Option B:	When all roots are lying in Left Half of S-Plane
Option C:	When Roots are lying in both half of S plane
Option D:	When Roots are on Imaginary Axis.
Q23.	In case of Transfer function, K represents
Option A:	Poles of TF
Option B:	Zeros of TF
Option C:	Frequency of Oscillations
Option D:	System Gain
Q24.	How to determine Frequency from Auxillary equation in Routh's Array
Option A:	By finding poles of Transfer function
Option B:	By finding Roots of the Auxillary equation.
Option C:	By finding roots of Numerator of G(s)H(s)
Option D:	By Finding Zeros of Transfer function.
Q25.	Determine the Settling Time for a certain second order system if the value of Natural frequency of oscillation is 7 rad/s and the damping ratio is 0.6
Option A:	0.56 Sec
Option B:	1.33 Sec
Option C:	0.95 Sec
Option D:	2.85 Sec