Program: BE Electrical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: EEC704 and Course Name: Control System - II

Time: 1hour Max. Marks: 50

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

Q1.	Which of the following is true, for a lead compensator with T.F. $Gc(s)=(s+1/T)/(s+1/\alpha T)$
Option A:	α = 1
Option B:	α = 0
Option C:	α <1
Option D:	α >1
Q2.	The Lag compensator
Option A:	Improves both steady state & transient response.
Option B:	Improves steady state only
Option C:	Improves transients only
Option D:	Improves steady state & reduces speed of transient response
Q3.	Which of the following is true, for a lag compensator with T.F. $G_c(s)=(s+1/T)/(s+1/\beta T)$
Option A:	β >1
Option B:	β =0
Option C:	β <1
Option D:	β =1
Q4.	Steady state error increases , since type of the system decreases this is the disadvantage of the
Option A:	Integral controller
Option B:	Derivative controller
Option C:	PD Controller
Option D:	Proportional Controller
Q5.	The integral controller is used to
Option A:	Increase the steady state error by increasing the type of the system
Option B:	Increase the steady state error by decreasing the type of the system
Option C:	Decrease the steady state error by decreasing the type of the system

Option D:	Decrease the steady state error by increasing the type of the system
Q6.	Which controller is less stable
Option A:	Proportional Controller
Option B:	Derivative controller
Option C:	Integral controller
Option D:	Rate feedback controllable
Q7.	The initial response when output is not equal to input is _____
Option A:	Error response
Option B:	Transient response
Option C:	Dynamic response
Option D:	Static response
Q8.	In a stable control system saturation can cause which of the following?
Option A:	Low-level oscillations
Option B:	High-level oscillations
Option C:	Conditional stability
Option D:	Over damping
Q9.	Zero-order hold used in practical reconstruction of continuous-time signals is mathematically represented as a weighted-sum of rectangular pulses shifted by:
Option A:	Any multiples of the sampling interval
Option B:	Integer multiples of the sampling interval
Option C:	One sampling interval
Option D:	1 second intervals
Q10.	Z-transform converts convolution of time-signals to
Option A:	Addition
Option B:	Subtraction
Option C:	Multiplication
Option D:	Division
Q11.	A good control system should be sensitive to _____
Option A:	Internal disturbances
Option B:	Environmental parameters
Option C:	Parametric variations
Option D:	Input signals (except noise)
Q12.	Unit step response of the system described by the equation y(n) +y(n-1) =x(n) is:
Option A:	$z^2/(z+1)(z-1)$
Option B:	z/(z+1)(z-1)
Option C:	(z+1)/(z-1)
Option D:	z(z-1)/(z+1)

Q13.	_____ is used to store numerical data required in math calculation
Option A:	Data memory
Option B:	User memory
Option C:	Executive memory
Option D:	Image memory
Q14.	What is the largest integer number that a PLC counter function can reach if it uses a 16 bit register
Option A:	32768
Option B:	65535
Option C:	65536
Option D:	65537
Q15.	Power flows from left to right in ladder diagram represents
Option A:	Rail
Option B:	Rung
Option C:	Power
Option D:	Connection
Q16.	The type of memory which is fast and temporarily stores the data which are immediately required for use is called as_____
Option A:	HDD
Option B:	ROM
Option C:	RAM
Option D:	SSD
Q17.	_____ causes PLC system to fail
Option A:	Over heating
Option B:	Connections
Option C:	Different module
Option D:	Environment
Q18.	Ladder diagram is _____ programming language
Option A:	Symbolic
Option B:	Code
Option C:	Graphical
Option D:	Ladder
Q19.	JNB instruction means
Option A:	Jump if bit = 0
Option B:	Jump if bit = 1
Option C:	Jump if CY =0
Option D:	Jump if CY =1
Q20.	Which instruction is used to turn off all non-retentive output of ladder diagram
Option A:	JSR

Option B:	TND
Option C:	SUS
Option D:	MCR
Q21.	The desired characteristic equation for observer design is given by
Option A:	|sI-(A-LC)|
Option B:	|sI-(A-BK)|
Option C:	|sI-A|
Option D:	|sI-LC|
Q22.	The rank of the observability matrix of the system with $A = \begin{bmatrix} 0 & 1 \\ -5 & -21/4 \end{bmatrix}$, $B = \begin{bmatrix} 0 \\ 1 \end{bmatrix}$, $C = [5 \quad 4]$
Option A:	2
Option B:	0
Option C:	3
Option D:	1
Q23.	If the rank of the observability matrix is equal to the order of the system, the system is
Option A:	Controllable
Option B:	not observable
Option C:	Not controllable
Option D:	observable
Q24.	For the given matrix B, the system is $B = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$
Option A:	Completely observable
Option B:	Completely controllable
Option C:	Not observable
Option D:	Not controllable
Q25.	The controllability matrix depends on
Option A:	Matrix A and C
Option B:	Matrix A and B
Option C:	Matrix A only
Option D:	Matrix B only

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	D
Q3.	A
Q4	B
Q5	D
Q6	A
Q7	B
Q8.	C
Q9.	B
Q10.	C
Q11.	D
Q12.	A
Q13.	A
Q14.	B
Q15.	A

Q16.	C
Q17.	A
Q18.	C
Q19.	A
Q20.	D
Q21.	B
Q22.	D
Q23.	D
Q24.	B
Q25.	B