

Program: BE Electrical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: EEC604 and Course Name: Control System-1

Time: 1hour

Max. Marks: 50

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

Q1.	The output signal is fed back at the input side from the _____ point
Option A:	Summing
Option B:	Differential
Option C:	Take-off
Option D:	Take away point
Q2.	Car is moving at a constant speed of 60 km/h, feedback element for the driver is
Option A:	Clutch
Option B:	Eyes
Option C:	Steering wheel
Option D:	Needle of the speedometer
Q3.	The overall transfer function from block diagram reduction for cascaded blocks is
Option A:	Sum of individual gain
Option B:	Product of individual gain
Option C:	Difference of individual gain
Option D:	Division of individual gain
Q4.	A node having only outgoing branches
Option A:	Input node
Option B:	Output node
Option C:	Intermediate node
Option D:	Terminal node
Q5.	Signal flow graphs is used to obtain the
Option A:	Stability of the system
Option B:	Transfer function of the system
Option C:	Controllability of the system
Option D:	Observability of the system
Q6.	Which among the following controls the speed of D.C. motor
Option A:	Galvanometer
Option B:	Gauss meter
Option C:	Potentiometer
Option D:	Tachometer

Q7.	The output signal is fed back at the input side from the _____ point
Option A:	Summing
Option B:	Differential
Option C:	Take-off
Option D:	Saddle
Q8.	Steady state error of a 'type 0' unity feedback system for a unit step function is
Option A:	zero
Option B:	infinity
Option C:	$K_p$
Option D:	$1/(1+K_p)$
Q9.	Addition of pole close to the origin on s-plane makes the system relatively
Option A:	More stable
Option B:	Less stable
Option C:	Unstable
Option D:	No effect
Q10.	Damping factor is a line on s-plane
Option A:	Radial line
Option B:	Horizontal line
Option C:	Vertical line
Option D:	Grid
Q11.	Open-loop transfer function $G(s)=4(1+2s)/s(s+2)$ with unity ramp input ,steady-state error will
Option A:	zero
Option B:	infinity
Option C:	0.5
Option D:	1
Q12.	If the pole of a system moves away from origin
Option A:	Settling time reduces
Option B:	settling time increases
Option C:	steady state error reduces
Option D:	output reduces
Q13.	Unity feedback system with $G(s)=1/4s^2(s^2+2)$ , poles are situated on s-plane
Option A:	Left side
Option B:	Right side
Option C:	Imaginary axis
Option D:	Every where
Q14.	Type of system with steady state error 0.4 for unit ramp input is
Option A:	zero

Option B:	One
Option C:	Two
Option D:	Any type
Q15.	Which point on root locus specifies the meeting or collision of two poles?
Option A:	Centroid
Option B:	Break away point
Option C:	Stability point
Option D:	Anti-break point
Q16.	In frequency response, the resonance frequency is basically a measure of
Option A:	Speed
Option B:	Distance
Option C:	Angle
Option D:	Curvature
Q17.	What is the number of the root locus segments which do not terminate on zeroes?
Option A:	The number of poles
Option B:	The number of zeroes
Option C:	The difference between the number of poles and zeroes
Option D:	The sum of the number of poles and the number of the zeroes
Q18.	The characteristic equation is $s^3+14s^2+(45+K)s+K=0$ , centroid is located at $(-x,0)$ then the value of x is _____
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q19.	In accordance to relative stability, the settling time exhibits inversely proportional nature to _____ parts of roots
Option A:	Real positive
Option B:	Real negative
Option C:	Imaginary positive
Option D:	Imaginary negative
Q20.	Due to an addition of pole at origin, the polar plot gets shifted by ___ at $\omega = 0$ ?
Option A:	$-45^\circ$
Option B:	$-60^\circ$
Option C:	$-90^\circ$
Option D:	$-180^\circ$
Q21.	Consider a feedback system with gain margin of about 30. At what point does Nyquist plot crosses negative real axis?
Option A:	-3

Option B:	-0.3
Option C:	-30
Option D:	-0.03
Q22.	Which among the following constitute the state model of a system in addition to state equations
Option A:	Input equations
Option B:	Output equations
Option C:	State trajectory
Option D:	State vector
Q23.	Conventional control theory is applicable to _____ systems
Option A:	SISO
Option B:	MIMO
Option C:	Time varying
Option D:	Non-linear
Q24.	The minimum number of states require to describe the two degree differential equation
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q25.	A transfer function of control system does not have pole-zero cancellation. Which one of the following statements is true
Option A:	System is neither controllable nor observable
Option B:	System is completely controllable and observable
Option C:	System is observable but uncontrollable
Option D:	System is controllable but unobservable

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<b>Question</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	C
Q2.	D
Q3.	B
Q4	A
Q5	B
Q6	D
Q7	C
Q8.	D
Q9.	B
Q10.	A
Q11.	C
Q12.	A
Q13.	C
Q14.	B
Q15.	B
Q16.	A
Q17.	D

Q18.	B
Q19.	B
Q20.	C
Q21.	B
Q22.	B
Q23.	B
BQ24.	B
Q25.	B