

EIC

Set 1

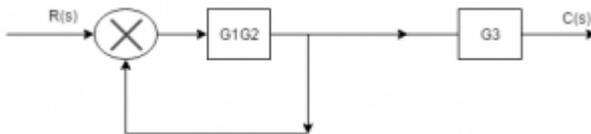
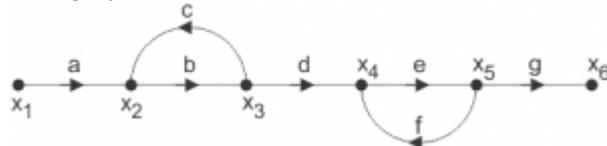
(1MKS)

1.	_____ is the ability of an instrument to show the exact reading Accuracy Precision Linearity Resolution
2.	Wheatstone bridge circuit is used for measurement of _____ strain gauge RTD Thermister all of above
3.	For measuring a very high resistance we should use Kelvin's double bridge Wheat stone bridge Meggar None of the above
4.	A measuring system consists of Transducer Amplifier Indicator All of these
5.	Strain is a _____ fractional change in volume fractional change in area fractional change in length fractional change in heigh
6.	Commonly used photoemissive material is _____ gold opium tellurium cesium-antimony
7.	Thermocouple is working on principle of Hall effect Static effect See back effect Thermal effect
8.	Land Line Telemetry System are classified as _____

	<p>Voltage telemetering system Current telemetering system Position telemetering system All of above</p>
9.	<p>Which principle does the linear system follow?</p> <p>Principle of energy conservation Principle of mass conservation Principle of electromagnetism Principle of superposition</p>
10.	<p>Which control systems basically exhibit their output dependency upon input as well as the previous output stages?</p> <p>Open-loop Control System Closed-loop Control System Both a & b None of the above</p>
11.	<p>Zeroes are defined as:</p> <p>Roots of the denominator of the closed loop transfer function Roots of the numerator of the closed loop transfer function Parts of the numerator Parts of the denominator</p>
12.	<p>At summing point, more than one signal can be added or _____</p> <p>Subtracted Multiplied Both a and b None of the above</p>
13.	<p>Signal flow graphs are reliable to find transfer function than block diagram reduction technique.</p> <p>True False</p>
14.	<p>What is the value of parabolic input in Laplace domain?</p> <p>1 A/s A/s² A/s³</p>
15.	<p>Which of the following is exhibited by Root locus diagrams ?</p> <p>The poles of the transfer function for a set of parameter values The bandwidth of the system</p>

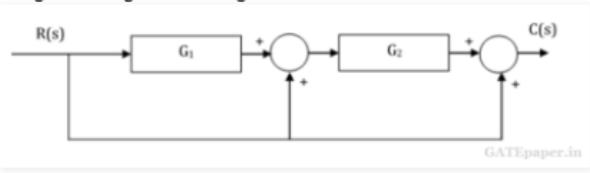
	<p>The response of a system to a step input</p> <p>The frequency response of a system</p>
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(2MKS)

16.	<p>Using a voltmeter measured value is 24.3V, while its true value is 24V. What is the relative error of measurement?</p> <p style="text-align: center;">1.25%</p> <p style="text-align: center;">1.2%</p> <p style="text-align: center;">1.3%</p> <p style="text-align: center;">1.4%</p>
17.	<p>For the block diagram given in the following figure, the expression of C/R is:</p>  <p style="text-align: center;"> $G_1G_2G_3/1-G_2G_1$ $G_1G_2/1-G_1G_2G_3$ $G_1G_2G_3/1-G_1G_2G_3$ $G_1G_2/G_3(1-G_1G_2)$ </p>
18.	<p>Use mason's gain formula to find the transfer function of the given signal flow graph:</p>  <p style="text-align: center;"> $abd/1-(ac)$ $abdeg/1-(bc+ef)+bcef$ $bd/1-(bc+ef)+bcef$ $adcdef/1-(bc+ef)+bcef$ </p>
19.	<p>Which among the following is represented by a parabolic input signal?</p> <p style="text-align: center;">Position</p> <p style="text-align: center;">Force</p> <p style="text-align: center;">Velocity</p> <p style="text-align: center;">Acceleration</p>
20.	<p>The system with the open loop transfer function $1/s(1+s)$ is:</p> <p style="text-align: center;">Type 2 and order 1</p> <p style="text-align: center;">Type 1 and order 1</p> <p style="text-align: center;">Type 0 and order 0</p> <p style="text-align: center;">Type 1 and order 2</p>

21.	<p>The transfer function of a process is $1/(16s^2 + 8s + 4)$. If a step change is introduced into the system, then the response will be</p> <p>Under damped None of these Over damped Critically damped</p>
22.	<p>The transfer function of a system is $G(s) = 100/(s+1)(s+100)$. For a unit step input to the system the approximate settling time for 2% criterion is:</p> <p>100 sec 4 sec 1 sec 0.01 sec</p>
23.	<p>Check the stability of the system whose characteristic equation is given by $s^4 + 2s^3 + 6s^2 + 4s + 1 = 0$</p> <p>Stable Unstable Marginally stable Cannot define</p>
24.	<p>The main objective of drawing root locus plot is</p> <p>To obtain a clear picture about the open loop poles and zeroes of the system. To obtain a clear picture about the transient response of feedback system for various values of open loop gain K. To determine sufficient condition for the value of 'K' that will make the feedback system unstable. Both b and c</p>
25.	<p>The phase angle of the system $G(s) = s+5/s^2+4s+9$; varies between</p> <p>0° and 90° 0° and -90° 0° and -180° -90° and -180°</p>

(3MKS)

26.	<p>Consider the following block diagram in the figure.</p>  <p>The transfer function $C(s)/R(s)$ is _____</p>
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	<p>(A) $\frac{G_1 G_2}{1 + G_1 G_2}$ (B) $G_1 G_2 + G_1 + 1$</p> <p>(C) $G_1 G_2 + G_2 + 1$ (D) $\frac{G_1}{1 + G_1 G_2}$</p>
27.	<p>The steady state error for a unity feedback system for the input $r(t) = Rt^2/2$ to the system $G(s) = K(s+2)/s(s^3+7s^2+12s)$ is</p> <p>0 6R/K ∞ 3R/K</p>
28.	<p>For marginally stable system find out value of K</p> $s^3 + 5s^2 + 7s + K = 0$ <p>35 -35 0 None of these</p>
29.	<p>Consider the loop transfer function $K(s+6)/(s+3)(s+5)$ In the root locus diagram the centroid will be located at:</p> <p>-4 -1 -2 -3</p>
30.	<p>If the Nyquist plot of the loop transfer function $G(s)H(s)$ of a closed-loop system encloses the $(1, j0)$ point in the $G(s)H(s)$ plane, the gain margin of the system is</p> <p>Zero Greater than zero Less than zero Infinity</p>