

University of Mumbai
Examination 2020 under cluster 8 (Lead College: PHCET, Rasayani)

Program: **Automobile Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester V

Course Code: AEC502 and Course Name: Mechanical Measurements & Control

Time: 1 hour

Max. Marks: 50

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For 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:	All of above
Q2.	In Force - Voltage analogy, spring constant is analogous to which of the following electrical parameters?
Option A:	voltage
Option B:	reciprocal of capacitance
Option C:	inductance
Option D:	resistance
Q3.	The overall transfer function of two blocks in parallel are
Option A:	sum of individual gain
Option B:	product on individual gain
Option C:	difference of individual gain
Option D:	division of individual gain
Q4.	A linear system at rest is subject to an input signal $r(t)=1-e^{-t}$. The response of the system for $t>0$ is given by $c(t)=1-e^{-2t}$. The transfer function of the system is:
Option A:	$(s+2)/(s+1)$
Option B:	$(s+1)/(s+2)$
Option C:	$2(s+1)/(s+2)$
Option D:	$(s+1)/2(s+2)$
Q5.	The transfer function of the system can be calculated as
Option A:	Laplace transform of output/Laplace transform of input
Option B:	Laplace transform of input/Laplace transform of output
Option C:	Laplace transform of output x Laplace transform of input
Option D:	Laplace transform of output + Laplace transform of input
Q6.	Any change in output has no effect on the input, then the system is called as
Option A:	open loop control system
Option B:	closed loop control system
Option C:	Both (A) & (B)
Option D:	Natural systems

Q7.	If the parameters of the system are not varying with respect to time, then this system is called as
Option A:	time invariant system
Option B:	time variant system
Option C:	Nonlinear system
Option D:	Linear system
Q8.	Zeros of the system on s-plane are represented by
Option A:	small circle
Option B:	large circle
Option C:	cross mark
Option D:	positive sign
Q9.	Roots of denominator of the transfer function is known as
Option A:	poles
Option B:	zeros
Option C:	order of transfer function
Option D:	none of them
Q10.	The highest power of 's' present in characteristics equation is known as
Option A:	poles
Option B:	zeros
Option C:	order of transfer function
Option D:	none of them
Q11.	Laplace transform of impulse function $\delta(t)$ is
Option A:	0
Option B:	1
Option C:	1/s
Option D:	K/s
Q12.	Which system has the tendency to oscillate?
Option A:	open loop system
Option B:	closed loop system
Option C:	Both (A) & (B)
Option D:	None of above
Q13.	A car is rising at a constant speed of 50 km/h, which of the following is the feedback element for the driver?
Option A:	clutch
Option B:	Eyes
Option C:	Needle of the speedometer
Option D:	steering wheel
Q14.	The principle of homogeneity & superposition are applied to
Option A:	Linear time invariant system
Option B:	Nonlinear time invariant system
Option C:	Linear time variant system

Option D:	Nonlinear time variant system
Q15.	Transfer function approach is applicable only for
Option A:	Linear time invariant sytem
Option B:	Nonlinear time invariant sytem
Option C:	Linear time variant system
Option D:	Nonlinear time variant system
Q16.	Transfer function of the system is defined as the ratio Laplace outputt to Laplace input considering initial conditions
Option A:	1
Option B:	2
Option C:	zero
Option D:	infinite
Q17.	Which of the following system is highly sensitive to disturbances & environmental changes?
Option A:	open loop control system
Option B:	closed loop control system
Option C:	Both (A) & (B)
Option D:	Dual made systems
Q18.	Error detector is present in which of the following systems?
Option A:	closed loop control system
Option B:	open loop control system
Option C:	negative feedback system
Option D:	positive feedback system
Q19.	When the feedback sign positive, then the system is called as
Option A:	positive feedback system
Option B:	negative feedback system
Option C:	closed loop control system
Option D:	open loop control system
Q20.	Poles of the system on s-plane are represented by
Option A:	small circle
Option B:	large circle
Option C:	cross mark
Option D:	positive sign
Q21.	The degree of closeness of the measured value of a certain quantity with its true value is known as
Option A:	Accuracy
Option B:	Precision
Option C:	Standard
Option D:	Sensitivity
Q22.	Error of measurement =

Option A:	True value – Measured value
Option B:	Precision – True value
Option C:	Measured value – Precision
Option D:	None of the above
Q23.	An ammeter is a
Option A:	Secondary instrument
Option B:	Absolute instrument
Option C:	Recording instrument
Option D:	Integrating instrument
Q24.	Which of the following is not true about first order irregularities?
Option A:	Arising due to irregularities in machine tool itself
Option B:	Arising due to weight of material itself
Option C:	Arise due to vibrations
Option D:	May arises due to deformation of work under action
Q25.	What is meant by roughness?
Option A:	Minute succession of hills of different height
Option B:	Minute succession of valleys and hills of different height and varied spacing
Option C:	Minute succession of valleys and hills of same height and same gap
Option D:	Minute succession of valleys of different depth