

Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: MEC502 and Course Name: Mechanical Measurements and Control

Time: 1hour

Max. Marks: 50

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

Q1.	The least change in the measured variable which gives an effective response of the instrument is known as
Option A:	Accuracy
Option B:	Hysteresis
Option C:	Resolution sensitivity
Option D:	Deviation
Q2.	Which type of standards is used for defining length between surfaces?
Option A:	Bar standard
Option B:	Light wave standard
Option C:	End standard
Option D:	Plane standard
Q3.	Natural error in measurement causes due to
Option A:	Vibration
Option B:	Parallax
Option C:	Misread
Option D:	Air
Q4.	Odometer is used to measure
Option A:	Threshold odours
Option B:	Composition of gases
Option C:	Suspended solids in a gas
Option D:	Distances
Q5.	Which strain gauge have the highest value of gauge factor
Option A:	Advance
Option B:	Nichrome
Option C:	Manganin
Option D:	Soft iron
Q6.	Which is the electric tachometer?
Option A:	Stroboscopic tachometer

Option B:	Encoder
Option C:	Dial gauge
Option D:	Vernier
Q7.	Nitrocellulose cement are applied in strain gauges as
Option A:	base material
Option B:	carrier
Option C:	adhesive
Option D:	catalyst
Q8.	An LVDT has an output in the form of
Option A:	linear displacement of core
Option B:	pulse
Option C:	rotary movement of core
Option D:	angular movement of core
Q9.	Bonding element in a strain gauge must have
Option A:	zero insulation resistance
Option B:	low insulation resistance
Option C:	high insulation resistance
Option D:	infinite insulation resistance
Q10.	Which of the given device is primarily used to measure pressure?
Option A:	Rotameter
Option B:	Pitot tube
Option C:	Bourdon tube
Option D:	Hygrometer
Q11.	A pirani gauges principle of working is
Option A:	Thermal conductivity of medium
Option B:	Electrical resistivity
Option C:	Conductance
Option D:	Capacitance
Q12.	Which of given tube material can be used for very high pressures measurement?
Option A:	Beryllium copper
Option B:	Phosphor bronze
Option C:	Stainless steel
Option D:	Alloy steel
Q13.	In a venturimeter, the velocity of the liquid at the throat is
Option A:	higher than inlet
Option B:	higher than outlet
Option C:	lesser than inlet

Option D:	minimum
Q14.	An automatic toaster is----- loop control system.
Option A:	Partially Closed
Option B:	Closed
Option C:	Open
Option D:	Feedforward system
Q15.	When shifting a take-off point ahead the summing point, which among the following should be added?
Option A:	Summing point in parallel with take-off point
Option B:	Summing point in series with take-off point
Option C:	Block of reciprocal transfer function
Option D:	Block of inverse transfer function
Q16.	At summing point, more than one signal can be added or
Option A:	divided
Option B:	Multiplied
Option C:	Subtracted
Option D:	Rooted
Q17.	In a parallel combination, the direction of flow of signals through blocks in parallel must resemble to the main _____
Option A:	Forward
Option B:	Feedback
Option C:	Opposite
Option D:	Diagonal
Q18.	In a step input function, output remains below a certain level for all the time, the system is
Option A:	stable
Option B:	steady
Option C:	not necessarily stable
Option D:	always unstable
Q19.	In a system zero initial condition means that
Option A:	The system is working with zero stored energy
Option B:	The system is at rest and no energy is stored in any of its components
Option C:	The system is working with zero reference signal
Option D:	Infinite gain
Q20.	The type Zero system has _____ at its origin.
Option A:	Infinite pole
Option B:	no pole

Option C:	one pole
Option D:	two poles
Q21.	When the unit step response of a unity feedback control system having forward path transfer function $G(s) = 80/s(s+18)$?
Option A:	Overdamped
Option B:	Critically damped
Option C:	Under damped
Option D:	Un Damped oscillatory
Q22.	Addition of zeros in transfer function causes which of the following ?
Option A:	Lead-lag compensation
Option B:	Lead-compensation
Option C:	Lag-compensation
Option D:	Lag lead lag compensation
Q23.	Which of the following is exhibited by Root locus diagrams?
Option A:	The response of a system to a step input
Option B:	The poles of the transfer function for a set of parameter values
Option C:	The bandwidth of the system
Option D:	The frequency response of a system
Q24.	Control system is called marginally stable, when gain margin is _____
Option A:	+ infinite
Option B:	0
Option C:	1
Option D:	zero
Q25.	Consider the following statements: 1. The effect of feedback is to reduce the system error 2. Feedback increases the gain of the system in one frequency range but decreases in another 3. Feedback can cause a system that is originally stable to become unstable Which of these statements are correct.
Option A:	1,2 and 3
Option B:	1 and 2
Option C:	2 and 3
Option D:	1 and 3