University of Mumbai
Examination 2020 under cluster 9 (FAMT)

Program: BE Mechanical Engineering

Curriculum Scheme: **Revised 2016**/~~2012~~

Examination: Third Year Semester V

Course Code: MEC502 and Course Name: MMC

Sample Questions are only for Reference and may/may not appear in the final exam.

Time: 1 hour   Max. Marks: 50

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

Q1.	Which law of thermodynamics is the basis of temperature measurement?
Option A:	Zeroth law of thermodynamics
Option B:	First law of thermodynamics
Option C:	Second law of thermodynamics
Option D:	Any law of thermodynamics is not the basis of temperature measurement
Q2.	Which of the following conversion take place in bourdon tubes?
Option A:	Pressure to displacement
Option B:	Pressure to voltage
Option C:	Pressure to strain
Option D:	Pressure to force
Q3.	Which of the following is an open loop control system ?
Option A:	DC motor speed control
Option B:	Traffic control signal
Option C:	Ship stabilization system
Option D:	Manual speed control system
Q4.	An open loop system is distinguished from closed loop system by which of the following?
Option A:	Servomechanism
Option B:	Output pattern
Option C:	Feedback
Option D:	Input pattern
Q5.	In an open loop control system
Option A:	output is dependent on input
Option B:	Sometimes output is dependent on input and sometime it is independent of input
Option C:	output is independent of input
Option D:	only system parameters have effect on the output
Q6.	Automatic control system in which output is a variable is called
Option A:	Automatic regulating system

Option B:	Servomechanism
Option C:	Process control system
Option D:	Closed loop system
Q7.	The following is a line standard of measurement
Option A:	Measuring tape
Option B:	Micrometer
Option C:	Slip gauge
Option D:	End bars
Q8.	Which of the following is a type of direct measuring instrument?
Option A:	micrometer
Option B:	Vernier caliper
Option C:	divider
Option D:	Ruler Scale
Q9.	The act of quantitative comparison between a predetermined standard and an unknown magnitude is called
Option A:	Comparator
Option B:	Gauging
Option C:	Measurement
Option D:	Calculation
Q10.	What is a Measurand
Option A:	End result of measurement
Option B:	An Error
Option C:	Physical quantity to be measured
Option D:	Object under observation
Q11.	For a pressure gauge of 50psi to 180psi, span is
Option A:	50 psi
Option B:	180 psi
Option C:	130 psi
Option D:	230 psi
Q12.	The dead zone of a certain pyrometer is 0.2% of the span. The calibration is 500K to 900K. What temperature change may occur before it is detected?
Option A:	120K
Option B:	40K
Option C:	400K
Option D:	80K
Q13.	In which of the following condition systematic error will occur
Option A:	Faulty Calibration
Option B:	Ambient temperature change

Option C:	Voltage change in supply
Option D:	Mistake in recording reading
Q14.	Among these which is not a cause of random error.
Option A:	Hysteresis
Option B:	Vibration
Option C:	Backlash in instrument
Option D:	Zero offset
Q15.	Self generating transducers are _____ transducers
Option A:	active
Option B:	Passive
Option C:	second
Option D:	inverse
Q16.	The transducer that converts the input signal into the output signal, which is a continuous function of time, is known as_____ transducer
Option A:	active
Option B:	passive
Option C:	analog
Option D:	digital
Q17.	Piezoelectric transducers work when we apply--------- to it
Option A:	heat
Option B:	mechanical force
Option C:	vibrations
Option D:	illumination
Q18.	Seismic transducer is used for measurement of
Option A:	linear velocity
Option B:	angular velocity
Option C:	acceleration
Option D:	pressure
Q19.	For the measurement of flow rate of liquid, the method used is
Option A:	Conveyor-based methods
Option B:	Bourdon tube
Option C:	Coriolis method
Option D:	Thermal mass flow measurement
Q20.	For the measurement of flow the cheapest device is
Option A:	Venturi
Option B:	Dall flow tube
Option C:	Flow nozzle
Option D:	Pitot static tube

Q21.	The on-off controller is a _____ system
Option A:	discontinuous
Option B:	linear
Option C:	non-linear
Option D:	digital
Q22.	If Unit ramp input is provided to a TYPE 0 system, what will be the value of Steady state error
Option A:	Zero
Option B:	Infinity
Option C:	One
Option D:	Equal to Velocity Error coefficient
Q23.	The time required for the response to reach 50% of the final value in the first attempt is called as
Option A:	Delay Time
Option B:	Rise Time
Option C:	Settling Time
Option D:	Peak Time
Q24.	Determine the Settling Time for a certain second order system if the value of Natural frequency of oscillation is 7 rad/s and the damping ratio is 0.6
Option A:	0.56 Sec
Option B:	1.33 Sec
Option C:	0.95 Sec
Option D:	2.85 Sec
Q25.	What is the 1st special case of Routh's array?
Option A:	There is one element zero (0) in the 1st column of the Routh's Array.
Option B:	There is epselon (ϵ) in the 1st column of the Routh's array.
Option C:	There is one element zero (0) in the last row of the Routh's Array.
Option D:	There is one element zero (0) in the 3rd column of the Routh's Array.