

**University of Mumbai**  
**Examination 2020 under cluster 4 (PCE)**

Program: BE Mechanical Engineering

Curriculum Scheme: **Rev2016**

Examination: Third Year Semester VI

Course Code: MEC601 and Course Name: METROLOGY & QUALITY ENGINEERING

Time: 1-hour

Max. Marks: 50

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

Q1.	The purpose of instruments is to
Option A:	Allow measurements to be made
Option B:	Transmit the information
Option C:	Change signals
Option D:	Receive the information
Q2.	The natural variability of the process is measured by
Option A:	Process mean
Option B:	Sample standard deviation
Option C:	Process standard deviation
Option D:	Sample mean
Q3.	Which of the following option involves material and component control?
Option A:	Development of standards
Option B:	Development of specification
Option C:	Quality control
Option D:	Feedback
Q4.	Which graphical representation reflects frequency of events?
Option A:	Bar diagram
Option B:	Histogram
Option C:	Pareto charts
Option D:	Cause and effect diagram
Q5.	The following is an infinity telescope and a collimator combined in a single instrument
Option A:	Clinometer
Option B:	Autocollimator
Option C:	Profile projector
Option D:	Optical Flat
Q6.	The percentage yield in Six Sigma is
Option A:	93.3
Option B:	99.38
Option C:	99.977
Option D:	99.99966
Q7.	Which of the following machine is used for rolling tests on gears

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Option A:	Parkinson gear tester
Option B:	Tooth caliper
Option C:	Base pitch measuring instrument
Option D:	Involute profile testing machine
Q8.	If we say a Type I error has been made, what we mean is that we have _____ a lot for which the fraction defective is _____.
Option A:	rejected; less than AQL
Option B:	accepted; less than LTPD
Option C:	rejected; greater than LTPD
Option D:	accepted; less than AQL
Q9.	The thread angle and form are usually measured by
Option A:	Optical Means
Option B:	Mechanical Means
Option C:	Electrical Means
Option D:	Electronics Means
Q10.	In interference of light the path difference $\lambda/2$ causes
Option A:	Bright fringe
Option B:	Dark fringe
Option C:	Red fringe
Option D:	No fringe
Q11.	Which errors are also known as cumulative errors?
Option A:	Random errors
Option B:	Systematic errors
Option C:	Gross errors
Option D:	System interaction errors
Q12.	If the Maximum Hole size is less than Minimum Shaft size then the type of fit would be
Option A:	Transition Fit
Option B:	Interference Fit
Option C:	Clearance Fit
Option D:	Loose fit
Q13.	Which of the following is not true about first order irregularities?
Option A:	Arises due to deformation of work under action
Option B:	Arising due to irregularities in machine tool itself
Option C:	Arising due to weight of material itself
Option D:	Arise due to vibrations
Q14.	The part to ensure that all measurements are made at the same pressure in a floating carriage micrometer is called as
Option A:	Top Slide
Option B:	Lower slide
Option C:	Fiducial Indicator

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Option D:	V- pieces
Q15.	Which of the following is a comparator
Option A:	Dial Indicator
Option B:	Micrometer
Option C:	Weighing Balance
Option D:	Slip gauges
Q16.	In wire methods, the diameter of the wire selected should be such that it makes contact with the screw along the
Option A:	Axis of the screw
Option B:	Major Diameter
Option C:	Pitch cylinder
Option D:	Minor diameter
Q17.	In order to measure the chordal thickness of a gear using a gear caliper, the position of the blade is set to
Option A:	Dedendum of the gear tooth
Option B:	The entire depth of gear tooth
Option C:	Addendum of the gear tooth
Option D:	Top surface of the gear tooth
Q18.	Vernier Caliper falls under which standard
Option A:	Primary Standard
Option B:	Secondary Standard
Option C:	Tertiary Standard
Option D:	Working Standard
Q19.	Maximum data handling analysis load is observed in
Option A:	Single sampling plan
Option B:	Double sampling plan
Option C:	Sequential sampling plan
Option D:	Cluster sampling
Q20.	Which of the following methods of inspection uses high frequency of sound waves for the detection of flaws in the castings?
Option A:	Penetrant test
Option B:	Radiography
Option C:	Pressure test
Option D:	Ultrasonic inspection
Q21.	Button spinning on a loop of thread is the principle used in
Option A:	Sigma Comparator
Option B:	Johansson Mikrokator
Option C:	Solex comparator
Option D:	Zeuss ultra optimizer
Q22.	Which of the following is not a line standard?

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Option A:	Yard
Option B:	Meter
Option C:	Precision scale
Option D:	Length bar
Q23.	Which among the following is the last step in magnetic particle test method?
Option A:	Observation and inspection
Option B:	Circular magnetization
Option C:	Demagnetization
Option D:	Magnetization
Q24.	When fringe pattern exhibits the movement of fringes towards the center the surface is
Option A:	Concave
Option B:	Convex
Option C:	Flat
Option D:	Tapered
Q25.	Tribology relates to
Option A:	Flatness measurement
Option B:	Straightness measurement
Option C:	Measurement of surface roughness
Option D:	Measurement of angles

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	C
Q4	B
Q5	B
Q6	D
Q7	A
Q8.	A
Q9.	A
Q10.	B
Q11.	B
Q12.	B
Q13.	D
Q14.	C
Q15.	A
Q16.	C
Q17.	C
Q18.	D
Q19.	C
Q20.	D
Q21.	B
Q22.	D

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Q23.	<b>C</b>
Q24.	<b>A</b>
Q25.	<b>C</b>