Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: MEC 601 and Course Name: Metrology & Quality Engineering

Time: 1 hour   Max. Marks: 50

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

Q1.	The systematic errors of an instrument can be reduced by making
Option A:	The sensitivity of instrument to environmental input as low as possible
Option B:	The sensitivity of instrument to environmental input as high as possible
Option C:	Systematic errors does not depend on the sensitivity of instrument
Option D:	Random errors does not depend on the sensitivity of instrument
Q2.	Imperial standard yard is made of
Option A:	platinum alloy
Option B:	platinum iridium alloy
Option C:	bronze
Option D:	steel
Q3.	The study of scientific metrology deals with
Option A:	accuracy and methods of measurement
Option B:	standard specifications
Option C:	theories related to nature
Option D:	precision and methods of measurement
Q4.	The measured size of the dimension of a component is called
Option A:	Basic Size
Option B:	Normal Size
Option C:	Allowed Size
Option D:	Actual Size
Q5.	What is the advantage of mechanical comparator over others?
Option A:	Less moving parts
Option B:	No need of external supply
Option C:	No error due to parallax
Option D:	Large range of instrument
Q6.	What is ten point height method?
Option A:	It is the average sum of ten highest points measured within sampling length.

Option B:	It is the average difference of five highest points and five deepest valleys measured within sampling length.
Option C:	It is the sum of ten highest points divided by sum of ten deepest valleys measured within sampling length.
Option D:	It is the average sum of five highest points and five deepest valleys measured within sampling length.
Q7.	What do you mean by Geometrical Surface?
Option A:	Surface prescribed by design without any errors of form or surface roughness
Option B:	Surface limiting the body and separating it from surrounding
Option C:	Close representation of real surface
Option D:	Outer surface of the body
Q8.	………. is equal to the differences of the two limits of size of the part
Option A:	Tolerance
Option B:	Low limit
Option C:	High limit
Option D:	Design size
Q9.	Tomlinson recorder is associated with measurement of
Option A:	Surface flaws
Option B:	Surface Perpendicularity
Option C:	Surface Irregularity
Option D:	Surface Curvature
Q10.	The secondary texture or waviness, or macro-error on surface results due to
Option A:	Normal action of the tool in production process
Option B:	Dominant direction of tool marks(Lay)
Option C:	Flaws in material
Option D:	Vibrations and non-uniformity in cutting tool
Q11.	In a two-wire method, the diameter of the best-size wire is given by……..
Option A:	d = (p/2) sec (x/2)
Option B:	d = (p/4) sec (x/2)
Option C:	d = (p/2) cosec (x/2)
Option D:	d = (p/2) cot (x/2)
Q12.	When face width of gear is too large
Option A:	Gear will have poor capacity to absorb shock loads
Option B:	There will be a possibility of concentration of load at one end of gear tooth
Option C:	There will be problem in lubricating the gear
Option D:	Staking of teeth will occur
Q13.	Least count of floating carriage micrometer is ………
Option A:	0.02 mm
Option B:	0.01 mm

Option C:	0.05 mm
Option D:	0.001 mm
Q14.	Autocollimator is used for
Option A:	Contactless angle measurement
Option B:	Thread Measurement
Option C:	Gear Measurement
Option D:	Error Measurement
Q15.	Backlash is commonly experienced in gear sets used to convert between translational and rotational motion. Backlash is a typical cause of
Option A:	Hysteresis
Option B:	Dead space
Option C:	Zero drift
Option D:	Sensitivity drift
Q16.	Which of the following option is true about an analytical method of inspection of gears?
Option A:	Analytical method is widely used for industries
Option B:	This method is fast
Option C:	All individual elements of gear teeth are checked
Option D:	More accurate
Q17.	Another name for Wobble _____
Option A:	Axial run-out
Option B:	Composite error
Option C:	Eccentricity
Option D:	Radial run-out
Q18.	"Quality is a predictable degree of uniformity and dependability at low cost and suited to the market" statement is given by?
Option A:	Juran
Option B:	Deming
Option C:	Hoshin
Option D:	Feigenbaum
Q19.	Which of the following is not a part of Juran Trilogy?
Option A:	Planning
Option B:	Control
Option C:	Check
Option D:	Improvement
Q20.	Which one from the following is a dimension of quality?
Option A:	Performance
Option B:	Hazard rate
Option C:	Process Capability

Option D:	Control limits
Q21.	Which of the following is the graphical representation of the total frequencies of occurrence of each type of defects type against the various defect types?
Option A:	Check sheet
Option B:	Pareto chart
Option C:	Histogram
Option D:	Control charts
Q22.	Sequential sampling is an extension of _____
Option A:	Single sampling plan
Option B:	Double-sampling plan
Option C:	Multiple-sampling plan
Option D:	0% sampling
Q23.	The producer's risk means the probability that the consumer will:
Option A:	Reject a bad lot
Option B:	Accept a bad lot
Option C:	Accept a good lot
Option D:	Reject a good lot
Q24.	In which type of test the capillary action principle is used?
Option A:	Probe test
Option B:	Bend liquid test
Option C:	Dye penetrant test
Option D:	Radiographic Test
Q25.	Which materials can be tested by Magnetic Particle Inspection?
Option A:	Magnetic
Option B:	Non-magnetic
Option C:	Paramagnetic
Option D:	Ferromagnetic