

Metrology and Quality Engineering

University of Mumbai

Examinations Summer 2022

(May-2022)

1T01426 // T.E (Mechanical Engineering) (SEM-VI) (Choice Base Credit Grading System) (R2016)

89021 // Metrology and Quality Engineering

Time: 2 hour 30 minutes

Max. Marks: 80

Q1. (20 Marks)	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks 02 Marks each
1.	According to Taylor's Principal NO Go gauge checks
Option A:	Only one feature at a time
Option B:	Only important dimensions at a time
Option C:	All Dimensions at a time
Option D:	Only the related dimension at a time
2.	A plug gauge is used for measuring
Option A:	Cylinders
Option B:	Cylindrical bores
Option C:	Spherical holes
Option D:	Angles
3.	A sine is used to measure
Option A:	Surface roughness
Option B:	Gear profiles
Option C:	Internal tapers
Option D:	External tapers
4.	Addendum of a gear is equal to
Option A:	Pitch p
Option B:	0.3 p
Option C:	0.3183 p
Option D:	0.6866
5.	Optical flats are used in conjunction with
Option A:	Angular measurement
Option B:	Surface flatness
Option C:	Surface profiles
Option D:	Interferometric measurement
6.	The value of a set of data at which the greatest number of cases is concentrated
Option A:	Mean
Option B:	Median
Option C:	Mode
Option D:	Rang
7.	It is a limit gauge with permanently or temporarily fixed measurement aperture(s) (gaps) which is called
Option A:	Snap gauge
Option B:	Plug gauge
Option C:	Ring Gauge
Option D:	Tapper gauge

8.	Compare the dimensions of the given component with the actual working standard is called
Option A:	Plug gauge
Option B:	Comparator
Option C:	Interferometer
Option D:	Projector
9.	Johansson Mickroacator is a type of
Option A:	Mechanical optical comparator
Option B:	Mechanical comparator
Option C:	Optical comparator
Option D:	Electrical Comparator
10.	Profilemeter is an instrument used to measure
Option A:	Gear
Option B:	Thread
Option C:	Surface roughness
Option D:	Taper

Q2. (20 Marks)	Solve any Four out of Six	5 marks each
A	Describe hole basic system and shaft basic system	
B	What are Go and No Go limit Gauges	
C	Describe Taylor's Principal of Gauge design	
D	Explain Talysurf with neat diagram	
E	Describe Limits fits and Tolarence	
F	Describe various elements of Surface roughness	
Q3 (20 Marks)	Solve any Two Questions out of Three	10 marks each
A	Describe the working of Tomlinson surface meter	
B	Describe the working of Parkinson gear tester	
C	Describe Testing Principal Ultrasonic testing	

Q4. (20 Marks)	Solve any Four out of Six	5 marks each
A	Describe the advantages of Non Destructive tests	
B	Describe the working of Sine bar	
C	Compare accuracy and Precision	
D	Describe with neat sketch Snap Gauge, Thread Gauge and Plug gauge	
E	Explain working Reed type Mechanical Comparator	
F	What is quality circle and process capability	