

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : 14ME3016
Sub. Name : Advanced Metrology

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	What do you mean by ‘calibration of measuring instruments’? What are the general guidelines for calibrating the instruments?	1	10
	b.	Describe various elements and its function of a generalized measurement system with block diagram and suitable example.	1	10
(OR)				
2.	a.	Explain in detail the basic components of coordinate measuring machine.	1	15
	b.	State applications of Laser Micro Meter.	1	5
3.	a.	Explain the working principle of laser interferometer with a neat sketch.	1	15
	b.	State the applications of laser interferometer.	1	5
(OR)				
4.	a.	What is machine vision system? Discuss in detail about the basic steps involved in machine vision system.	3	15
	b.	Define Wave Length Standards based on Krypton - 86 emission.	3	5
5.	a.	Explain in detail the construction and working of Scanning Electron Microscope with a neat diagram. State its applications.	3	15
	b.	Identify any one machine tool alignment tests on Lathe.	3	5
(OR)				
6.	a.	What is Ball Bar? Explain in detail how it is used for testing the accuracy of machine tool with neat sketch.	3	15
	b.	Describe the working of Michelson Interferometer.	3	5
7.	a.	Explain the working principle of Tomlinson surface meter with a neat diagram.	3	15
	b.	Discuss the various elements of surface texture.	3	5
(OR)				
	a.	What do you understand by geometric tolerances?	2	5
8.	b.	Discuss unilateral and bilateral system of writing tolerances with suitable example and explain which system is preferred in interchangeable manufacturing and why?	2	15
<u>Compulsory:</u>				
9.	a.	Discuss on Transmission Electron Microscope (TEM) with a neat sketch. Explain its how its different from Scanning Electron Microscope.	3	20

ALL THE BEST