Code No: PT32031/R13 **RA** SET - 1

III B. Tech II Semester Regular/ Supplementary Examinations, April - 2018

METROLOGY

(Mechanical Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Write about interchangeability?	[3M]
	b)	Write the importance of profile and position gauges.	[4M]
	c)	What are the applications of interferometer?	[4M]
	d)	What are the various factors influencing surface finish?	[4M]
	e)	What are the different elements of a screw thread?	[3M]
	f)	What is meant by an alignment test on machine tools?	[4M]

PART -B

2	a)	Describe about nominal size, limits and deviations?	[8M]
	b)	Explain International standard system of tolerances?	[8M]
3	a)	Explain the manufacturing method for slip gauges and how they calibrated?	[8M]
	b)	List various angle measurement instruments. Describe the working principle of Bevel protractor?	[8M]
4	a)	Describe the working principle and applications of optical projector and optical flats	[8M]
	b)	Explain about NPL gauge interferometer with neat diagram?	[8M]
5	a)	How are R_a and RMS values of surface finish of a surface assessed? Explain with diagrams?	[6M]
	b)	What are the salient features of a pneumatic comparator? Describe pneumatic comparator with a neat sketch and write its uses?	[10M]
6	a)	Discuss various types of errors in Gear measurement?	[8M]
	b)	Derive an equation for effective diameter of a screw thread?	[8M]
7	a)	Describe the measurement of flatness of surfaces using surface plates?	[8M]
	b)	Explain the alignment test for drilling machine.	[8M]

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