Code No: **R32031**   **R10**   **Set No. 1**

III B.Tech II Semester Supplementary Examinations, April/May - 2019
METROLOGY
(Mechanical Engineering)

Time: 3 hours   **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1	a)	Explain about positive and negative allowance with a neat sketch and differentiate between allowance and tolerance?	[8M]
	b)	A 50mm diameter shaft is made to rotate in bush, the tolerances for both shaft and bush are 0.05mm. Determine the dimension of the shaft and the bush to give a max clearance of 0.075mm with whole basis system?	[7M]
2	a)	Describe the principle which states the design of "Go" and "No -Go" gauges for checking the material limit?	[8M]
	b)	Classify and explain the different "GO" and "No-Go" gauges?	[7M]
3	a)	Mention the types of straight edges and write the applications?	[7M]
	b)	Write the significance of interferometry in the development of measuring techniques?	[8M]
4	a)	Describe in detail about trayer type profilogram?	[7M]
	b)	With a neat sketch explain taylor Hobson talysurf instrument for surface roughness measurement?	[8M]
5	a)	Describe in detail about Zeiss optotest comparator with neat sketch and list out their advantages also?	[8M]
	b)	With a neat sketch explain the working principle of electrical comparators?	[7M]
6	a)	Describe in detail various types of errors occurring in gears? Explain in brief?	[8M]
	b)	With a neat diagram explain about rolling tests on Gears?	[7M]
7	a)	Describe a pitch measuring machine with neat sketch?	[8M]
	b)	Explain how the various elements of internal threads are measured?	[7M]
8	a)	Describe in detail, how you would check the squareness to table of the spindle and the spindle of a radial drill?	[8M]
	b)	How you would check the Spindle axis of a lathe whether it is parallel to the bed or not?	[7M]

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