Code No: RT31032 **R13** SET - 1

III B. Tech I Semester Supplementary Examinations, May - 2016
METAL CUTTING & MACHINE TOOLS
(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)	Why can relief or clearance angles never be zero or negative?	[3M]
	b)	Give four applications of grinding process.	[4M]
	c)	What is a lap? Explain.	[4M]
	d)	What is diamond machining? Explain.	[3M]
	e)	What are the various types of lathe?	[4M]
	f)	What do you mean by the term 'Taper'?	[4M]

PART -B

2		What are the velocities which come in to existence when a metal is cut orthogonally? Show these velocities graphically on a velocity diagram and determine the mathematical relationship in terms of shear and rake angles.	[16M]
3	a)	What are the advantages of having a hollow spindle in the headstock of lathe?	[8M]
	b)	Explain briefly the parts of lathe.	[8M]
4		Discuss in detail the following with neat sketches: a) Radial drilling machine b) Sensitive drilling machine.	[16M]
5	a)	What is the function of milling machine?	[4M]
	b)	Explain with a neat sketch about a horizontal milling machine.	[12M]
6	a)	How is grinding classified?	[4M]
	b)	Explain with a neat sketch a plane cylindrical grinder.	[12M]
7	a)	What is a "clamp"?	[4M]
	b)	List the basic requirements of clamping devices and explain about quick acting clamps.	[12M]

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