R13

SET - 1

III B. Tech I Semester Supplementary Examinations, October/November - 2018
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)	What are the factors responsible for built-up edge in cutting tools?	[3M]
	b)	What is thread cutting operation?	[4M]
	c)	Mention the operation performed by planer?	[4M]
	d)	Define "climb milling".	[3M]
	e)	How do you classify grinding operation?	[4M]
	f)	Write the advantages of computer numerical control system.	[4M]

PART -B

2	a)	A tool life of 110 minutes is obtained at 25mpm and 10 minutes at 65mpm. What is the tool equation? Determine cutting speeds values for tool life of 1 minute and 200 minutes. Also determine the tool life values for a speed of 50mpm and 80mpm.	[8M]
	b)	What is the use of a chip breaker? Discuss the various types of chips produced during metal machining process.	[8M]
3	a)	Explain the salient features of an automatic screw machines.	[8M]
	b)	Name the different methods of taper turning done on a centre lathe and explain any two methods with neat sketch.	[8M]
4	a)	Explain the constructional features of a twist drill and label the important features with a neat diagram	[8M]
	b)	Describe the method of producing curved surface on a planner.	[8M]
5	a)	Classify milling machines. Sketch and describe principal parts of a column and knee type machine	[8M]
	b)	Explain the methods of holding milling cutters.	[8M]
6	a)	List the various factors to be considered in selection of grinding wheel? Discuss them in detail.	[8M]
	b)	Explain centre less grinding process with a neat sketch.	[8M]
7	a)	Describe the main features of CNC machines, which distinguish them from conventional machine tools.	[8M]
	b)	Explain briefly the following locating devices: i) Cylindrical locators ii) Diamond pin locator	[8M]

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