Code No.: ME504PC | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–I–Semester End Examinations (Supply) - May- 2023
METROLOGY & MACHINE TOOLS
(MECH)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks.

PART-A **(20 Marks)**

1. a)	What are the Lathe Accessories?	[2M]
b)	Define the term Machinability.	[2M]
c)	How a shaper can be specified?	[2M]
d)	Define term boring.	[2M]
e)	What are the types of surfaces that can be produced using plain cylindrical grinders?	[2M]
f)	What is meant by up milling and down milling?	[2M]
g)	Define the term readability and repeatability.	[2M]
h)	What is the constructional difference between an autocollimator and an angle dekkor?	[2M]
i)	Distinguish between major and minor diameters in screw threads.	[2M]
j)	Define the term CMM.	[2M]

PART-B **(50 Marks)**

2.	Explain the working principle and parts of lathe machine with neat sketch.	[10M]
	OR	
3 a)	Differentiate between single spindle and multi-spindle automatic lathes.	[5M]
b)	Discuss about lathe Accessories and attachment in detail.	[5M]
4.	Describe the process of counter boring and counter sinking on boring machine with neat sketch.	[10M]
	OR	
5.	What is a slotter? Contrast its working principal and main parts of a slotter with neat sketch.	[10M]
6.	Illustrate about the universal milling machine with a neat sketch.	[10M]
	OR	
7.	What is dressing and truing, in reference to grinding wheel? Explain them with neat sketch.	[10M]
8.	Determine the tolerance on hole and shaft for a precision running fit designated by 40H7g6 40 mm lies in the dia step of 30-50 mm i=0.45(D) 1/3 +0.001D microns Fundamental deviation of g shaft= -2.5 D 0.34 and IT7= 16i State the actual maximum and minimum size of the both hole and shaft and maximum and minimum clearance.	[10M]
	OR	
9 a).	Explain in detail the working of sine bar in finding an unknown angle.	[10M]
b).	Write a short note on: i. Interchangeability ii. Selective assembly.	[10M]
10.	Identify the working principle of Tailor Hobson Talysurf surface meter with neat sketch.	[10M]
	OR	
11.	Explain the alignment test on lathe machine with the help of neat sketch.	[10M]

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