Code No: 135BE

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, October - 2020
METROLOGY AND MACHINE TOOLS
(Mechanical Engineering)

Time: 2 hours   Max. Marks: 75

Answer any five questions
All questions carry equal marks
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1.a) Classify the chips formed in metal cutting. What factors are responsible for formation of different chips?
 b) Explain the working principle of engine lathe.   [8+7]

2.a) Draw the neat sketch of twist drill bit? Show its different parts on it.
 b) Classify the boring machines and write its applications.   [8+7]

3.a) Explain the constructional feature of planer with neat sketch.
 b) How shaper is different from planer?   [8+7]

4.a) Explain the characteristics that distinguish a milling from other machining processes.
 b) Compare between up milling and down milling.   [8+7]

5.a) How a grinding wheel selected for grinding process for particular workpiece material?
 b) Draw the neat sketch of broach tool. How this tool is different from other tools?   [7+8]

6.a) State and explain the Taylor's principle of Gauge design.
 b) Distinguish between unilateral and bilateral tolerance system.   [7+8]

7.a) Explain the working principle of optical flat. Mention its applications.
 b) How to measure the flatness of a surface? Explain.   [8+7]

8.a) List the various pitch errors found in screw. State their causes.
 b) Name and describe the CLA, RMS methods of measuring the surface roughness.   [7+8]

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