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10MA81

Eighth Semester B.E. Degree Examination, June/July 2019
Tool Engineering and Design

Time: 3 hrs. Max. Marks:100

Note: ***Answer FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Discuss orthogonal cutting process with necessary sketch. **(10 Marks)**
b. Illustrate the following : i) connected C-type chip ii) C-type chip iii) Long 'ear' type chip. **(10 Marks)**

2 a. Briefly discuss ISO carbide classification system. **(12 Marks)**
b. Illustrate the following turning – tool designs :
i) Brazed carbide tool
ii) Multi – edge clamped tool. **(08 Marks)**

3 a. Illustrate any 2 types of chip breakers. **(10 Marks)**
b. Illustrate a zero rake flat form tool. **(10 Marks)**

4 a. Illustrate the straight shank drill nomenclature. **(13 Marks)**
b. Consider a plain milling cutter in which.
N = 300 rpm
V = work piece feed = 300mm /min
n = 10 teeth
D = Dia of cutter = 102 mm
d = depth of cut = 6 mm
i = inclination angle = 0°
for there values obtain the following :
i) feed/tooth ii) unreformed max, chip thickness iii) underformed chip length. **(07 Marks)**

PART – B

5 a. Illustrate a straight shank straight fluted hand tap. **(14 Marks)**
b. Sketch the basic elements of a broach construction. **(06 Marks)**

6 a. Illustrate the 6 point location principle. **(06 Marks)**
b. Illustrate the use of pins and buttons as locators. **(14 Marks)**

7 a. Illustrate the following :
i) Solid clamp
ii) Two point clamp. **(12 Marks)**
b. Illustrate a channel type drill jig. **(08 Marks)**

8 a. Explain any 2 holding devices for turning operation. **(12 Marks)**
b. Illustrate a fixture used while milling keyslots on shafts. **(08 Marks)**

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