

MECHANICAL ENGINEERING DEPARTMENT, I.I.T. KANPUR
TA 202: Manufacturing Processes: Quiz-1; Max. Marks: 15; Time: 15 min; VKJ/I-0214

Name: _____ ; Roll No. _____ Section: _____

Note: Write the answers in the space provided, or as instructed in the question. Number within parentheses indicates marks. No partial grading.

Q.1. Encircle the most appropriate answer: {3x1}

(a) Time taken to machine a 2.5 cm long shaft at 300 RPM and feed rate of 0.25 mm/rev. will be: (a₁) 10 s, (a₂) 40 s, (a₃) 20 s, (a₄) 50 s, (a₅) None of these.

(b) During turning of a M.S. shaft, chip thickness ratio will be: (b₁) >1, (b₂) <1, (b₃) =1.

(c) Shear plane angle is the angle between (a₁) shear plane and the machined surface, (a₂) shear plane and rake face of the tool, (a₃) rake face of the tool and the vertical plane, (a₄) shear plane and horizontal plane, (a₅) none of these.

Q.2 Write true (T) or false (F) in the bracket { } provided.

(i) h_k is a flank wear index which indicates permitted flank wear in mm. [1] { }

(ii) Two single point turning tools (A and B) are specified as follows: [2]

A : 10 - 10 - 6 - 6 - 10 - 15 - 3

B : 15 - 12 - 6 - 6 - 10 - 15 - 1

Which of these tools is stronger? { }

(iii) H.S.S. single point tool is recommended for turning WC bar at 50 m/min. Write whether this recommendation is correct (T) or wrong (F)?. [2] { }

Q.3. Match the items in column A with the items in column B. [7]

A

- (a₁) HSS
- (a₂) 2-D cutting
- (a₃) Tolerances
- (a₄) Prismatic parts
- (a₅) Increasing hole size
- (a₆) Flank wear
- (a₇) Programmable M/C tools

B

- (b₁) CNC Machining center
- (b₂) Oblique cutting
- (b₃) boring operation
- (b₄) Wear on rake face
- (b₅) Oblique cutting
- (b₆) Milling operation
- (b₇) Orthogonal machining
- (b₈) Difference between upper limit of size and lower limit of size
- (b₉) None of these
- (b₁₀) Tool material.

Answer (Fill the correct answer from column B).

(a₁) _____ ;(a₂) _____ ;(a₃) _____ ;(a₄) _____ ;(a₅) _____ ;(a₆) _____ ;(a₇) _____

Good Luck