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Question Paper Code: 44703

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

Fourth Semester

Mechanical Engineering

14UME403 - MANUFACTURING TECHNOLOGY - II

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Purpose of cutting fluid is to reduce _____
 - (a) wear
 - (b) friction
 - (c) heat
 - (d) all the above
2. Tool wear increases due to _____
 - (a) speed
 - (b) feed
 - (c) depth of cut
 - (d) none
3. While machining, the quality of the product was decided by _____
 - (a) tool geometry
 - (b) machine tool
 - (c) labour
 - (d) force exerted
4. Tool signature is _____
 - (a) numerical method of identification of tool
 - (b) specification
 - (c) plan of tool
 - (d) none of the above

5. The process of removing metal by a milling cutter, which is rotated in the same direction as the feed of the work piece
- (a) Face milling
 - (b) Conventional milling
 - (c) Up milling
 - (d) Climb milling
6. The metal is removed in drilling machine by
- (a) Extrusion
 - (b) Shearing
 - (c) Shearing and Extrusion
 - (d) Shearing and Compression
7. Honing is an operation primarily used for finishing
- (a) Flat surface
 - (b) Cylindrical surface
 - (c) Hole
 - (d) Irregular surface
8. Internal gear cutting operation can be performed by
- (a) Milling
 - (b) shaping with rack cutter
 - (c) shaping with pinion cutter
 - (d) hobbing
9. Several machine tools can be controlled by a central computer in
- (a) Numerical Control machine tool
 - (b) Computer Numerical Control machine tool
 - (c) Direct Numerical Control machine tool
 - (d) Central- Computer Numerical Control machine tool
10. Part-programming mistakes can be avoided in
- (a) NC (Numerical Control) machine tool
 - (b) CNC (Computer Numerical Control) machine tool
 - (c) Both a and b
 - (d) None of these

PART - B (5 x 2 = 10 Marks)

11. State the difference between orthogonal and oblique cutting.
12. Sketch any four work holding devices.
13. State the differences between reaming and boring.
14. Why are speeds so much higher in grinding than in cutting?

15. What are the informations required to create part programme manually?

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Briefly describe the different types of inserts used in metal cutting. (8)
(ii) Write briefly about tool wear and tool life. (8)

Or

- (b) Explain the mechanics of chip formation and also the types of chips produced in metal cutting. (16)

17. (a) Explain with neat sketch the methods used for taper turning operation in an engine lathe. (16)

Or

- (b) Write short notes on
(i) Tool geometry (4)
(ii) Material removal rate (8)
(iii) Forces in turning operation (4)

18. (a) Explain the universal dividing head and simple indexing methods with illustrative example for milling spur gear. (16)

Or

- (b) Explain with simple sketch the pull and pull broaching machines. (16)

19. (a) Explain the honing process with neat sketches. (16)

Or

- (b) Explain with neat sketch the gear manufacturing methods. (16)

20. (a) (i) What are the advantages of CNC machines over conventional methods. (6)
(ii) Explain the principles of CNC machines. (10)

Or

- (b) Explain the various components of numerical control machine tools. (16)