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Question Paper Code: 54073

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fourth Semester

Mechanical Engineering

15UME403 - MANUFACTURING TECHNOLOGY – II

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- The point at which the cutting tool reaches, beyond which it will not function satisfactorily until it is reground, is called as
 - tool wear
 - tool failure
 - too diffusion
 - none of these
- In metal cutting, use of low feeds and high cutting speeds is desired when the objective is
 - High metal removal rate
 - Dry machining tool
 - Use of soft cutting tool
 - Surface finish
- A Turret (square) tool post can accommodate _____ tool(s).
 - 1
 - 2
 - 3
 - 4
- For the manufacture of screw fasteners on a mass scale, which is the most suitable machine tool?
 - Capstan lathe
 - Single spindle automat
 - CNC turning centre (lathe)
 - CNC machining centre
- The factor affecting size and surface and surface finish in broaching is
 - Proper tool design
 - Consistency of datum faces
 - Strength of the part
 - Uniformity of material

6. Which one of the following is true for the last few teeth of a broach which are meant for fine finishing?
- They have equal diameter
 - They have increasing diameter
 - They have decreasing diameter
 - They have alternatively increasing and decreasing diameter
7. Internal gears can be made by
- hobbing
 - shaping with pinion cutter
 - shaping with rack cutter
 - milling
8. Which of the following processes of gear manufacturing results in best accuracy of involutes gear tooth profile?
- Milling
 - Hobbing
 - Rotary gear shaper
 - Rack type gear shaper
9. The power requirement for the ball screw arrangement is less due to
- Reduced capacity
 - Reduced friction
 - Reduced material usage
 - Reduced power rating
10. With incremental tool positioning
- each tool movement is made with reference to the last tool position
 - all tool movement is measured from a fixed point or origin
 - all tool movement is measured from a zero point
 - All the above

PART - B (5 x 2 = 10 Marks)

- List out the essential characteristics of a cutting fluid.
- List the advantages of turret lathe over capstan lathe.
- Define the cutting speed and machining time for drilling.
- What is objective of gear shaving process?
- State the difference between a closed loop NC systems with open loop systems.

PART - C (5 x 16 = 80 Marks)

- (a) Explain with a neat sketches about the different types of chips produced during metal machining. (16)

Or

(b) Elaborate the important properties of various cutting tool materials used in industry. (16)

17. (a) Draw neat sketches of steady and follower rests and explain briefly their applications. (16)

Or

(b) Sketch and briefly describe the constructional features of swiss type automatic screw machine. (16)

18. (a) Sketch and discuss the construction features of the column and knee type milling machine and also explain their main parts. (16)

Or

(b) Explain the principle of broaching operation with neat sketch also explain the nomenclature of broaching tool. (16)

19. (a) Explain the working mechanism of cylindrical and surface grinding with a neat sketch. (16)

Or

(b) Discuss the working principle and applications of honing, lapping and super finishing processes. (16)

20. (a) Discuss briefly about manual programming of a NC machine and also explain difference between manual and computer assisted part programming. (16)

Or

(b) Describe with neat sketch various steps involved in the manual part programming. (16)
