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Question Paper Code: 54703

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fourth Semester

Mechanical Engineering

15UME403 – MANUFACTURING TECHNOLOGY – II

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. The angle between side cutting edge and end cutting edge is called as CO1- R
(a) approach angle (b) nose angle (c) side relief angle (d) end relief angle
2. Which of the following assumption is not valid for merchant circle CO1- R
diagram?
(a) Continuous Chips (b) Discontinuous chips
(c) Cutting edge remains sharp (d) No built up edge
3. External threads can be produced by means of CO2- R
(a) Taps (b) Dies (c) Lathe machine (d) All of the above
4. Which of the following cutting tool has highest hot hardness? CO2- R
(a) Ceramics (b) Cast alloys
(c) High speed steels (d) Carbon tool steel
5. Circumference of a work piece is to be divided in 8 equal division using CO3- R
index plate of 24 slots. Indexing ratio is equal to
(a) 3 (b) 2 (c) 4 (d) 6

6. horizontal type shaper is type of shaper according to CO3- R
 (a) design of the table (b) position and travel of the ram
 (c) type of cutting stroke (d) none of the mentioned
7. Removing dull grains in order to make grinding wheel sharp is known as CO4- R
 (a) Loading (b) Glazing (c) Dressing (d) Trueing
8. To connect two intersecting shafts we use CO4- R
 (a) Spur gear (b) Helical gear (c) Worm and wheel (d) Bevel gears
9. Which of the following code will give linear interpolation movement? CO5- R
 (a) G00 (b) G78 (c) G01 (d) G65
10. Computer will perform the data processing functions in CO5- R
 (a) NC (b) CNC (c) DNC (d) VMC

PART – B (5 x 2= 10Marks)

11. What is orthogonal cutting? CO1- R
12. Mention the names of any four lathe accessories. CO2- R
13. State the nomenclature of standard drill. CO3- R
14. List the gear generating process. CO4- R
15. Name the various elements of CNC machines. CO5- R

PART – C (5 x 16= 80Marks)

16. (a) In an, Orthogonal cutting test with a tool of rake angle 10° , the following observations were made:
Chip thickness ratio = 0.3
Horizontal component of the cutting force = 1290 N
Vertical component of the cutting force = 1650 N
From Merchant's theory, calculate the various components of the cutting forces and the coefficient of friction at the chip tool interface.

Or

- (b) (i) What is a chip Describe the different types of chips produced during metal machining with neat sketches? CO1- U (8)
- (ii) Discuss any four cutting tool materials used in metal cutting. CO1- U (8)
17. (a) Discuss the various methods of taper turning attachments of a lathe, with neat sketches. CO2- U (16)

Or

- (b) Explain the construction and working principle of Turret indexing mechanism with neat sketch. CO2- U (16)
18. (a) With a help of a diagram explain crank and slotted link mechanism. CO3- U (16)

Or

- (b) Classify the broaching machines and explain Continuous Broaching Machines with neat sketch. CO3- U (16)
19. (a) Explain with neat sketches the Centre less grinding and cylindrical grinding. List their advantages CO4- U (16)

Or

- (b) What are the various methods used for gear finishing? Discuss in detail with neat sketch. CO4- U (16)

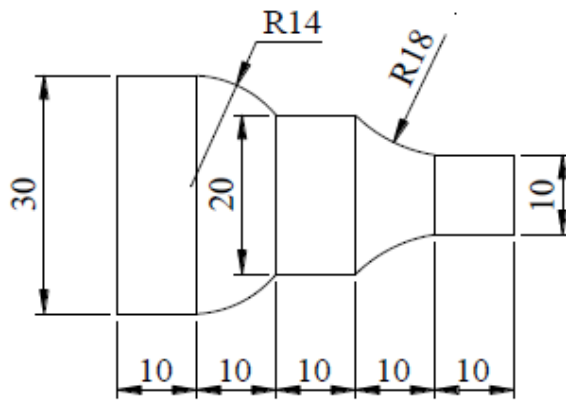
20. (a) Explain the features of CNC machine

CO5- U (16)

Or

(b) Write a part program for machining this component

CO5-App (16)



All dimensions are in mm