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Question Paper Code: 41072

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2015.

Fourth Semester

Mechanical Engineering

01UME403 - MANUFACTURING TECHNOLOGY II

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Write the effect of Back Rake Angle and mention the types.
2. State the assumption made in Merchant Circle.
3. Specify the main difference between live center and dead center.
4. State the various feed mechanism used for obtaining automatic feed.
5. What is the function of clapper block in a shaper?
6. What are the different types of Broaching machines?
7. What is lapping?
8. Give some limitations of gear hobbing process.
9. Classify NC Motion Control System?
10. Give some motion statements in APT.

PART - B (5 x 16 = 80 Marks)

11. (a) In an Orthogonal cutting process, the following observations were made. Depth of cut = 0.25mm , Chip thickness Ratio = 0.45, Width of cut = 4mm , Cutting velocity = 40 m/min , Cutting force component parallel to cutting velocity vector = 1150N , Cutting force component normal to cutting velocity vector = 140N , Rake Angle = 18° . Determine the Resultant cutting force, Power of cutting, Shear plane angle, Friction angle and force component parallel to shear plane? (16)

Or

- (b) (i) Differentiate between Orthogonal cutting and Oblique cutting? (8)
(ii) Explain the variables and factors affecting Machinability? (8)
12. (a) Explain in detail the various Taper turning methods in lathe? (16)

Or

- (b) List the step by step procedure for preparing tool layout of turret and capstan lathe in detail? (16)
13. (a) Explain with a neat sketch the Ratchet and Pawl mechanism of a shaper? (16)

Or

- (b) Briefly explain the different types of saving machines? (16)
14. (a) Explain Honing & Super finishing with neat sketch? (16)

Or

- (b) Write short notes on
(i) Gear Forming
(ii) Gear Shaping
(iii) Gear Grinding
(iv) Gear Hobbing (16)
15. (a) Explain the different components of NC Machine Tool? (16)

Or

- (b) Briefly explain with illustrations about the manual part programming? (16)