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Question Paper Code: 41743

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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. Tool life is measured by the
 - (a) Number of pieces machined between tool sharpenings
 - (b) Time the tool is in contact with the job
 - (c) Volume of material removed between tool sharpenings
 - (d) All the above
2. Relief angles on high speed steel tools usually vary from
 - (a) 0° to 3°
 - (b) 3° to 10°
 - (c) 10° to 20°
 - (d) 20° to 30°
3. The lathe spindles are usually made hollow and provided with
 - (a) Internal taper
 - (b) External taper
 - (c) Internal and external taper
 - (d) No taper
4. The chuck used for setting up of heavy and irregular shaped work should be
 - (a) Four jaw independent chuck
 - (b) Three jaw universal chuck
 - (c) Magnetic chuck
 - (d) Drill chuck
5. In a plain milling machine, the table can be moved
 - (a) Longitudinally
 - (b) Crosswise
 - (c) Vertically
 - (d) all the above

6. In which of the following machine, the work remains stationary and the tool is rotated
- (a) Vertical boring machine (b) Horizontal boring machine
(c) Precision boring machine (d) Jig boring machine
7. Surface grinding is done to produce
- (a) Tapered surface (b) Flat surface
(c) Internal cylindrical holes (d) all the above
8. A coarse grained grinding wheel is used to grind
- (a) Hard and brittle materials (b) Soft and ductile materials
(c) Hard and ductile materials (d) Soft and brittle materials
9. In CNC machine tool, the part program entered into the computer memory
- (a) can be used only once
(b) can be used again and again
(c) can be used again but it has to be modified every time
(d) cannot say
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. Compare orthogonal and oblique cutting.
12. What is the main difference between live center and dead center?
13. List the types of sawing machines.
14. What are the specifications of grinding wheel?
15. List the differences between NC and CNC.

PART - C (5 x 16 = 80 Marks)

16. (a) What is a chip breaker? Describe the different types of chips produced during metal machining with neat sketches. (16)

Or

- (b) What are the standard angles of cutting tool? Illustrate with an example. (16)
17. (a) Explain the various taper turning methods used in lathe with neat sketch. (16)

Or

- (b) Explain the features and classification of multi spindle automatics. (16)
18. (a) With a neat sketch explain the column and knee type milling machine and name its main parts. (16)

Or

- (b) (i) Sketch and explain the hydraulic drive of a horizontal shaper. (8)
- (ii) Describe the working of a crank and slotted link mechanism. (8)
19. (a) Explain the working mechanism of cylindrical and surface grinding. (16)

Or

- (b) (i) Write short notes on gear shaping. (8)
- (ii) List the advantages and disadvantages of gear shaping process. (8)
20. (a) Explain the various elements of NC machine with closed loop control system. (16)

Or

- (b) (i) List any five motions and control statements of computer assisted NC programming and explain. (8)
- (ii) Under what conditions of production the numerically controlled machine tools are employed. (8)

