A

Question Paper Code: 54703

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

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)

1. A taper tap has   CO1- R

    (a) Its end tapered for about three or four threads

    (b) Its end tapered for about eight or ten threads

    (c) Full threads for the whole of its length

    (d) None of the above

2. In metal cutting operation, maximum heat (i.e. 80-85%) is generated in   CO1- R

    (a) The shear zone   (b) The chip-tool interface zone

    (c) The tool-work interface zone   (d) None of the above

3. The binding material used in cemented carbide tools is   CO2- R

    (a) 250°C   (b) 350°C   (c) 500°C   (d) 900°C

4. Work piece is hold in   CO2- R

    (a) Chuck   (b) Tail stock   (c) Carriage   (d) Head stock

5. A drill mainly used in drilling brass, copper or softer materials, is   CO3- R

    (a) Flat drill   (b) Straight fluted drill

    (c) Parallel shank twist drill   (d) Tapered shank twist drill

6. The cutting tool in a milling machine is mounted on   CO3- R

    (a) Spindle   (b) Arbor   (c) Column   (d) Knee

7. The process of removing metal by a cutter which is rotated in the same direction of travel of workpiece, is called   CO4- R

    (a) Up milling   (b) Down milling   (c) Face milling   (d) End milling

8. In Super finishing operation   CO4- R

    (a) The work rotates, the abrasive block reciprocates

    (b) The abrasive block rotates, the work reciprocates

    (c) Both abrasive block and work rotates

    (d) Both abrasive block and work reciprocates

9. Part-programming mistakes can be avoided in   CO5- R

    (a) NC (Numerical Control) machine tool   (c) Both a. and b.

    (b) CNC (Computer Numerical Control) machine tool   (d) None of the above

10. Gear finishing operation is called   CO5- R

    (a) Shaping   (b) Milling   (c) Hobbing   (d) Burnishing

PART – B (5 x 2= 10 Marks)

11. Name the four types of chips that occur in metal cutting.   CO1- R

12. List any four methods by which taper turning is done in a center lathe.   CO2- R

13. How will you specify the lathe?   CO3- U

14. What is broaching and how the broaches are classified?   CO4- R

15. Classify and list the boring machines.   CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Describe in detail about the types of chips produced in metal   CO1- U   (16)
         cutting process.

                                    Or

    (b) With a neat sketch, explain the nomenclature of a single point   CO1- U   (16)
         cutting tool.

17. (a) Explain With a neat sketch, explain the components of a lathe.   CO2- U   (16)

                                    Or

    (b) Explain the construction and working principle of parallel action CO2- U (16)
         multi spindle lathe with a neat sketch.

54703

18. (a) With a schematic illustration, explain the working principle of a   CO3- U   (16)
vertical spindle milling machine in detail

<center>Or</center>

(b) Describe the principle operation of a shaper with neat sketch.   CO3- U   (16)

19. (a) Explain with a neat sketch the following grinding operations in   CO4- U   (16)
detail.

<center>Or</center>

(b) Write short notes on   CO4- U   (16)
1. Gear hobbing process
2. Gear shaping process
3. Lapping process
4. Honing process

20. (a) Explain The Construction and working principle of CNC.   CO5-U   (16)

<center>Or</center>

(b) Explain with a neat sketch Four types of reference coordinates in   CO5- U   (16)
CNC.

54703