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Question Paper Code: U4703

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2023

Fourth Semester

Mechanical Engineering

21UME403 - MANUFACTURING TECHNOLOGY

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. Purpose of cutting fluid is to reduce _____ CO1- U
(a) wear (b) friction (c) heat (d) all the above
2. The negative rake angle is usually provided on CO1-U
(a) high carbon tools (b) high speed tools
(c) cemented carbide tools (d) all of the above
3. Knurling operation in a lathe is used for producing CO1-U
(a) A plane surface (b) A cylindrical surface
(c) A serrated surface (d) A tapered surface
4. The preferred option for holding an odd work piece in a centre lathe is CO1-U
(a) live and dead centres (b) three jaw chuck (c) lathe dog (d) four jaw chuck
5. The tool used in a shaper is CO1-U
(a) Multipoint cutting tool (b) two point cutting tool
(c) Single point cutting tool (d) None of these
6. Cutting of material during slotting operation takes place in CO1-U
(a) Forward stroke (b) Backward stroke
(c) Both forward and backward stroke (d) None of the mentioned

7. Slab milling can be performed more effectively by _____ milling machine. CO1-U
 (a) horizontal (b) vertical
 (c) can't say anything (d) none of the mentioned
8. Which milling process the cutting is done on the end of the cutter as well as periphery? CO1-U
 (a) Plain or slab milling (b) Side milling (c) Face milling (d) End milling
9. Which of the following operation is used for grinding flat surface? CO1-U
 (a) Form grinding (b) Centreless grinding
 (c) Cylindrical grinding (d) Surface grinding
10. Grinding is commonly used on CO1-U
 (a) Aluminum (b) Brass (c) copper (d) cast iron

PART – B (5 x 2= 10Marks)

11. Mention two examples for orthogonal cutting. CO1-U
12. Explain what is taper? CO1-U
13. List out some differences between the vertical shaper and slotter. CO1-U
14. List out the work holding devices used on a milling machine. CO1-U
15. List out the advantages of honing process. CO1-U

PART – C (5 x 16= 80Marks)

16. (a) (i) Explain what is tool life? CO1-U (16)
 (ii) Discuss briefly the different types of tool materials.
 Or
 (b) (i) Write short note on surface finish. CO1-U (16)
 (ii) Explain the forms of wears on the cutting tool with neat sketch.
17. (a) Explain taper turning operation in a lathe by a taper turning attachment. Discuss its advantages. CO1-U (16)
 Or
 (b) Explain with neat sketches various types operations performed in lathe. CO1-U (16)
18. (a) With a neat sketch explain the working of a vertical broaching machine. CO1-U (16)

Or

- (b) With the help of neat sketch, discuss the working of continuous surface broaching machine and write its advantages and limitations. CO1-U (16)

19. (a) With a neat sketch, explain the principle parts and angles of a plain milling cutter. CO1-U (16)

Or

- (b) Sketch and describe the basic types of milling cutters and milling operations. CO1-U (16)

20. (a) Explain the Plasma Arc Machining process with neat sketch and state its advantages, disadvantages and applications. CO1-U (16)

Or

- (b) Explain the working of Ultrasonic Machining process with neat sketch and mention its applications. CO1-U (16)

