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Question Paper Code : X86766

M.E./M.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2021
Second Semester
Manufacturing Engineering
MF 5203 – TOOLING FOR MANUFACTURING
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What is a press tool ?
2. Explain about importance tool engineering.
3. What is the necessity of automatic lathes ?
4. What is swing diameter of lathe ?
5. Explain about insert dies.
6. Why are sectional dies used ?
7. What is the principle of resistance welding ?
8. Write four defects in arc welding.
9. Why calibration is needed ?
10. List out tool inspection methods.

PART – B

(5×13=65 Marks)

11. a) i) Explain about different manufacturing processes and it's their necessary objectives. (7)
ii) Discuss about nature and scope of tool engineering. And also explain about general tool design steps. (6)
(OR)
b) i) Explain the principles of economy for tooling and manufacturing. And also list out that are problems facing in tooling economy. (6)
ii) Discuss about different manufacturing principles that are applicable for tool planning and tool controlling. (7)



12. a) i) Discuss the various types of CNC Machines based on tool motion. (7)
ii) Explain parameters control the tool life in cutting tools. (6)

(OR)

- b) i) Describe the main constructional features of CNC machines, which distinguish them from conventional machine tools? (7)
ii) Explain the construction and working principle of a lathe with suitable diagram. (6)

13. a) i) What is the general rule for piercing-punch diameter with respect to material thickness? (7)
ii) How it is possible to blank a part without die break by using the fine blanking process? (6)

(OR)

- b) i) What is mean by die clearance? Is the die clearance placed on the punch or die opening for a blanking and piercing operation? (7)
ii) What are the major advantages of short-run tooling for piercing operations? (6)

14. a) i) Explain the different types of pattern allowances with its limitations. (7)
ii) What are the common welding troubles? And explain its causes and remedies. (6)

(OR)

- b) i) Differentiate among the welding, brazing and soldering processes. (7)
ii) What are the essential steps in brazing operation? Explain with your example. (6)

15. a) i) Explain about clinometers and angle dekkor with sketches. (7)
ii) Describe about survey of liner and angular measurements with neat diagrams. (6)

(OR)

- b) i) Explain the principles of design and manufacturing of gauges which is used in inspection methods. (7)
ii) Explain different Coordinate Measuring Machines (CMM) with its advantages and disadvantages. (6)

PART – C

(1×15=15 Marks)

16. a) Determine the milling fixture to machine the end surface and flange edges of the link connecting rod. Assume that the end holes have been previously bored to size.

(OR)

- b) What problems may be encountered in the case of mass feed when solid form blocks are mounted in a progressive die? And also the different methods are used to remove the work piece from the punch or die cavity after a forming operation.
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