

Indian Maritime University
(A Central University, Govt. of India)
End Semester Examinations – June 2023
Programme Name: B Tech (ME)
Semester: I
Subject Code: UG11T4105
Subject Name: Workshop Technology

Date: 17.06.2023

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

General Instructions:

- (i) **All Sections (A, B & C) are to be attempted.**
(ii) **Options, if any, are specified in respective section.**

Section A

Attempt all questions

Marks: 10X1=10

Q1. Choose the machine tools in which tool reciprocates in horizontal axis and job feeds in intermittent translatory motion:

- a) Milling machine
- b) Planing machine
- c) Shaping machine
- d) None of the above

Q2. Drilling is an example of:

- a) Orthogonal cutting
- b) Oblique cutting
- c) Simple cutting
- d) Uniform cutting

Q3. Turret head in turret lathe is generally mounted on:

- a) Slide
- b) Saddle
- c) Ram
- d) None of the above

Q4. The operation of making a cone-shaped enlargement of the end of a hole is known as:

- a) Trepanning

- b) Counter-boring
- c) Counter-sinking
- d) Spot facing

Q5. A file with 20 teeth in 25 mm is called:

- a) Rough file
- b) Bastard file
- c) Second cut
- d) Smooth file

Q6. Scribing block is used to:

- a) Hold the round bar during marking
- b) Check the trueness of flat surface
- c) Locate the centres of round bar

Q7. In which of the following aspects in DC welding better than AC welding?

- a) Efficiency
- b) Arc stability
- c) Power consumption
- d) Cost

Q8. The oxy-acetylene gas used in gas welding produces a flame temperature of:

- a) 1800°C
- b) 2100°C
- c) 2400°C
- d) 3200°C

Q9. The lathe machine centres are provided with standard taper known as:

- a) Morse taper
- b) Seller's taper
- c) Chapman taper
- d) Brown and sharp taper

Q10. Which of the following is the example of multi point cutting tool?

- a) Milling cutter
- b) Broaching tool
- c) Both milling cutter and broaching tool
- d) None of the mentioned

Section B

Attempt all questions

Marks: 5x2=10

- Q11. What is Interchangeability?
- Q12. Explain the term lapping.
- Q13. Explain the term Reaming.
- Q14. What are the factors affecting Weldability.
- Q15. Write a short note on PPE.

Section C

Answer any five of the following

Marks: 5x10=50

- Q16. a) Draw a drill bit and label the different parts and cutting angles.(6Marks)
b) Differentiate between Turret and Capstan lathe machine.(4 Marks)
- Q17. a) Draw and Label the parts of a Lathe machine (8 Marks)
b) What precautions should be taken when using a lathe machine?(2 Marks)
- Q18. a. What are the essential requirements that are to be considered while installing and designing safety guards on the machines? (5 marks) b. Sketch and explain the functioning of the tap and die.(5 Marks)
19. a) Explain in detail any two of the following job holding devices: (6 Marks)
i) Bench vice ii) Angle plate iii) V- Block
b) Draw a ball peen hammer and label all the parts. (4 Marks)
- Q20. a) Briefly differentiate with suitable a sketch, between orthogonal cutting and Oblique cutting?(5 Marks)
b) Explain the properties and the functions of cutting fluid during metal cutting.(5Marks)

Q21. a) Explain the following tools with the help of a neat diagram

1. Micro-meter
2. C Clamp
3. Centre punch

b) Draw a neat sketch of a "File Tool" mentioning different parts with the brief description of each part?

(6+4 Marks)

Q22. Describe the following welding setups with the help of the diagram:

- a. Oxyfuel gas welding (5 Marks)
- b. Submerged arc welding(5 Marks)

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