

Indian Maritime University  
(A Central University, Govt. of India)  
End Semester Examinations – June 2023

Programme Name: B Tech (ME)  
Semester: I

Subject Code: UG1174105

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) Repanning

- 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)