

**INDIAN MARITIME UNIVERSITY**  
**(A Central University, Govt. of India)**

B.Tech. (Marine Engineering)  
December 2015 End Semester Examinations – Semester - I

**Workshop Technology**  
Subject Code: UG11T2106/UG11T1106

Time: 3 hrs  
Date: 29.12.2015

Max Marks: 100  
Pass Marks: 50

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**PART- A** **(10 x 3 = 30 Marks)**  
**(Compulsory Question.)**

1. (a) Draw and name different type of files used at Work Shop.
- (b) Draw a vernier scale and level the parts.
- (c) What is the function of soft hammer at the Work Shop. What is ball pin hammer?
- (d) With respect to machine process define the term ‘cutting speed’ and ‘ feed’.
- (e) What is the basic purpose of cutting fluid used in the machine process?
- (f) What all checks to be carried out before starting a lathe machine?
- (g) Describe different type of packing and joints used for pipe fitting purpose.
- (h) Write short note on PPE.
- (i) Briefly describe the safety precaution to be taken during grinding operation with fixed grinder fitted at Work Shop.
- (j) Explain the term weldability. What all factor it depends upon?

**PART-B** **(5 x 14 = 70 Marks)**  
**( Answer any FIVE of the following. )**

2. (a) Draw an external calliper and try square and mention their use.
- (b) Draw a neat sketch of twist drill and mention the different angle. (7+7)
3. (a) Sketch and describe a Glob valve ? Mention the materials of different parts.
- (b) Briefly state the operational principal of reducing valve. (9+5)
4. (a) Discuss the “ principle of metal cutting”.
- (b) What is the advantage of larger positive rake angle respect to single point cutting tool.
- (c) A bar of diameter 110 mm and length (L) 800mm has to be machined to reduce its diameter to 101mm while keeping the length same. It takes 5 minute to load and unload the work piece. Maximum depth of cut(t) that can be taken care of on this machine is 2mm. Roughing feed(fr) is 0.5mm per revolution and finishing feed(ff)is 0.2mm per revolution. Maximum cutting speed “V” allowed 40 meter per minute. Calculate the total time required. (4+3+7)

5. (a) With respect to lathe machine differentiate between four jaw independent chuck and self centering chuck.  
(b) Briefly describe the straight turning and taper turning process by a common work shop lathe. Mention the rough turning and finish turning. (4+10)
6. (a) Write short note on (i) Honning and (ii) lapping .  
(b) What is the function of feeler gauge used at the Work Shop.  
(c) What is the advantage of jig and fixture. (7+3+4)
7. (a) Point out the potential sources of dangers present at work shop. How they encountered.  
(b) What is risk assessment?  
(c) Briefly discuss the important provision of the Factory Act 1948. When was it entered into force? (6+2+6)
8. (a) With respect to oxy-acetylene gas welding describe different type of flame used . Mention the practical use of each flame.  
(b) Briefly discuss the oxy-acetylene gas welding process.  
(c) Why storing of acetylene gas is difficult? How it can be stored in high pressure condition. (4+6+4)
9. (a) What are the different electrodes used for the metal arc welding? Discuss each type.  
(b) Briefly describe the TIG welding process  
(c) What is the methodology of soldering joints? How bonding is formed? (4 +6 +4)

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