

**Indian Maritime University**  
**(A Central University, Govt of India)**  
**End Semester Examinations – June 2025**  
**Programme Name: B Tech (ME)**  
**Semester: VII**  
**Subject Code: UG11T4705**  
**Subject Name: MARINE MATERIALS**

Date: 06.06.2025

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

**Section A**

Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable.

1. Amorphous Solids have ----- structure  
a. Regular    b. Irregular    c. Linear    d. None
2. The Co-ordination no. in HCP is  
a. 6    b. 2    c. 20    d. 12
3. AB AB ----- type close packing pattern represents  
a. FCC    b. CCP    c. HCP    d. BCC
4. Which of the following is not a natural Polymer  
a. RNA    b. Cellulose    c. Rayon    d. Starch
5. A Polymer with an amide linkage is known as  
a. Nylon 6,6    b. Teflon    c. Terylene    d. Bakelite
6. Horizontal arrest in a cooling curve represents  
a. Continuous cooling    b. Invariant reactions    c. Both a & b    d. None
7. Relative amount of phases in a region can be used in  
a. Phase rule    b. Lever rule    c. Either a or b    d. None
8. The Purpose of normalising the steel is to  
a. Remove induced stress    b. Improve Machinability  
c. Soften the steel    d. None of the above
9. Pearlite is formed from austenite on  
a. Fast Cooling    b. Moderate Cooling    c. Slow Cooling    d. None of the above

10. Crank and Camshaft are made up of ----- materials  
a. Bronze b. Copper c. Medium carbon steel d. Iron

### **Section B**

Five Questions of 02 Marks each

11. Define the term coordination number.
12. Give any two differences between thermoplastics and thermosetting plastics.
13. State Gibb's Phase rule.
14. What is the purpose of doing heat treatment?
15. What is PTFE? Give any two applications of PTFE?

### **Section C**

Seven Questions of 10 Marks each of which any 05 questions to be answered.

16. Find out the atomic packing factor of SC, BCC, FCC, & HCP Crystals.
17. Explain the following a. Chopped stranded mats b. Woven Roving  
c. Glass-reinforced plastics d. Fibre-reinforced plastics
18. Draw a neat diagram Iron Carbide equilibrium diagram. Explain the various micro constituents of the iron carbide diagram.
19. Explain the following  
a. Cooling Curves of Solid Solution, Pure Metal, and Multi phase alloy  
b. A & B Metals Mutually liquid solubility but partially solid solubility
20. What are plastics? Explain the various moulding techniques of plastics with suitable examples.
21. Explain the following a. Carburizing b. Cyaniding  
d. Nitriding d. Flame hardening
22. What types of materials are used in Propeller, rudder, and in Diesel engine components?