

# INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

## MOCK TEST PAPER

### Entrance Examination for Admission to Ph.D/ MS (By Research)

**Subject Name:**

**Maximum Marks:** 120

**Date:**

**Time:** 2 Hours

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### INSTRUCTIONS

1. Prior to the commencement of the examination, Candidate should check that this question paper **does not** have any unprinted or torn or missing pages or items, etc. If so, he has to get it replaced with a complete test booklet.
2. This Question Paper contains 120 questions. Each correct answer gets 1 mark. There are no negative marks for wrong answers.
3. Candidate has to mark answers only in the OMR sheet provided. Follow the instructions given on the OMR sheet.
4. You have to bubble all your answer in **Blue or Black Pen** on the separate OMR Answer Sheet provided. See directions in the Answer Sheet.
5. More than one bubbled answer per question will make the question invalid for evaluation.
6. **Please note that it is the candidate's responsibility to fill in the Roll Number carefully on the OMR sheet.**
7. You have to enter your Roll Number in the Question Paper in the Box provide alongside. **DO NOT** write **anything else** on the Test Booklet.
8. At the end of the examinations both OMR sheet and the Question booklet have to be handed over to the Invigilator.
9. Sheets for rough work are appended in the Question Paper at the end.

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## Multiple Choice Questions in General Aptitude for Ph.D/M.S (By Research)

1. What least number must be added to 1056, so that the sum is completely divisible by 23?
  - a. 21
  - b. 3
  - c. 2
  - d. 18
2. In the first 10 overs of a cricket game, the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs?
  - a. 6.25
  - b. 6.5
  - c. 6.75
  - d. 7
3. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:
  - a.  $145^\circ$
  - b.  $150^\circ$
  - c.  $155^\circ$
  - d.  $160^\circ$
4. If a quarter kg of Walnut costs Rs. 60, how much will 200 gm cost?
  - a. Rs. 48
  - b. Rs. 54
  - c. Rs. 56
  - d. Rs. 72
5. Find the best option JAK, KBL, LCM, MDN, \_\_\_\_\_
  - a. OEP
  - b. NEO
  - c. MEN
  - d. PFQ
6. Who is the English physicist responsible for the 'Big Bang Theory'?
  - a. Albert Einstein
  - b. Michael Skube
  - c. Roger Penrose
  - d. George Gamow
7. Here are some words translated from an artificial language.  
*gorbflur* means fan belt  
*pixngorbl* means ceiling fan  
*arthtusl* means tile roof

Which word could mean "ceiling tile"?

- a. gorbtlusl
- b. flurgorbl
- c. arthflur
- d. pixnarth

8. \_\_\_\_\_ is essential for swimming

- a. pool
- b. bathing suit
- c. water
- d. life jacket

9. Find out the alternative figure which contains figure (X) as its part.



(X)



(1)

(2)

(3)

(4)

- a. 1
- b. 2
- c. 3
- d. 4

10. Look at this series: 53, 53, 40, 40, \_\_\_\_, \_\_\_\_, 14. What numbers should come in the blank?

- a. 34, 34
- b. 38, 38
- c. 27, 27
- d. 22, 22

11. Secretly is to openly as silently is to

- a. scarcely
- b. impolitely
- c. noisily
- d. quietly

12. Three dice, whose all six faces, marked '1' to '6', are thrown. The number of ways of getting a sum of 16 is

- a. 4
- b. 6
- c. 3
- d. 12

13. Headquarters of International Maritime Organization located at
  - a. Geneva
  - b. New York
  - c. Paris
  - d. London
  
14. MLC refers to
  - a. Maritime Logistics Convention
  - b. Maritime Labour Convention
  - c. Montreal Labour Convention
  - d. Mumbai Labour Convention
  
15. IMO No. of a Ship as \_\_\_\_ number of digits?
  - a. 10
  - b. 9
  - c. 8
  - d. 7
  
16. Flag State of the Ship means
  - a. Country / Place where the Ship Owner resides
  - b. Country / Place where the Ship is registered
  - c. Country / Place where Charterer is registered
  - d. Country / Place where Master resides
  
17. Panama Canal connects the following Ocean
  - a. Pacific Ocean and Antarctic Ocean
  - b. Pacific Ocean and Atlantic Ocean
  - c. Atlantic Ocean and Indian Ocean
  - d. Indian Ocean and Pacific Ocean
  
18. One Knot equals to
  - a. 1.852 Km/hr
  - b. 1.15078 km/hr.
  - c. 0.878 m/s
  - d. 1.1 Km/s
  
19. SEXTANT helps in
  - a. Navigation
  - b. Propulsion
  - c. Steering
  - d. Loading

20. Bill of Lading means
- Receipt for the cargo accepted for shipping
  - Receipt for amount collected for shipping cargo
  - Bill for insurance amount of Cargo being carried
  - None of the above
21. Most commonly used anode on ships
- Steel
  - Brass
  - Zinc
  - Copper
22. To rest a ship near a port anchor is used –
- by laying on sea bed
  - by hanging in the water
  - by keeping it on board
  - none of the above
23. ORB
- On Board Record book
  - Oil Record Book
  - Oil & Residues Book
  - None of the above
24. BIMCO
- Bangladesh and India Maritime Conference
  - Baltic and International Maritime Council
  - British Maritime Congress
  - None of the above
25. Maximum number of ship breaking yards in India are located in
- Ratnagiri
  - Alang
  - Mumbai
  - Kolkata
26. Use of hydrostatic release unit attached to a life raft is to
- Prevent accidental release
  - Release the life raft if ship sinks
  - Keep it lashed
  - Protect the life raft

27. In India, the ports are categorized as Major and non-Major Ports. Which one of the following is a non-Major Port?
- Paradip
  - New Mangalore
  - Dahej
  - Cochin
28. Sea water density is
- 1027 kg/m<sup>3</sup>
  - 1.027 kg/m<sup>3</sup>
  - 10.27 kg/m<sup>3</sup>
  - 102.7 kg/m<sup>3</sup>
29. The first ship to be constructed fully in India after independence was built at
- Mazagon Docks
  - Cochin Shipyard
  - Hindustan Shipyard
  - Garden Reach Ship Builders
30. OPEC is the
- Organization of Problematic Economies Committee
  - Organization of Pre-European Commission
  - Oil Producing Economies Caucus
  - Organization of Petroleum Exporting Countries

### **Multiple Choice Questions in - Marine Engineering:**

61. The piston is subjected to the following stresses:
- Compressive stresses caused by gas pressures,
  - Inertia forces
  - Thermal stresses & Tensile stresses
  - All of the above
62. The function of compression rings in a piston is
- The compression rings tend to expand and seal the combustion space
  - To prevent occurrence of "Blow-by" & To ensure that the liner is protected by the oil film
  - To protect the liner surface from the harmful effects of hot combustion gases
  - All the above
63. Chrome plating is done especially
- On the top two piston rings.
  - All the piston rings
  - First three piston rings
  - Both compression rings and scraper rings

64. Cylinder liner lubricating oil of large bore engines burning heavy fuel oil should have essential properties
- To reduce sliding friction between piston rings and liner,
  - Of high viscosity at high working temperature so that it spreads along the surface of liner.
  - Of low viscosity at high working temperature so that it spreads along the surface of liner.
  - High TBN Value.
65. Cylinder liner is subjected to
- Tensile stresses & Cyclic hoop stresses
  - Thermal stresses due to temperature differences
  - None of the above
  - All of the above

**Multiple Choice Questions in - Maritime Management:**

66. INCOTERMS are published by
- International Chamber of Shipping
  - International Chamber of Commerce
  - International Maritime Organization
  - United Nations Conference on Trade and Development Exports
67. Which of the following is a customs station?
- Mumbai port
  - Inland Container Depot, Bangalore
  - All Cargo Container Freight Station, Chennai
  - All the above
68. List of cargoes to be discharged from a ship in a port is known as
- Cargo list
  - Import General Manifest
  - Export General Manifest
  - Customs list
69. A shipping bill will be accepted by the carrier for loading the cargo only after
- It is filed with Customs
  - It is submitted through a Customs House Agent
  - Let Export Order endorsement is made on it by Customs.
  - The Customs duty is paid

70. Bill of Entry pertains to
- Exports
  - Imports
  - Entering the terminal
  - Receipt for export cargoes

**Multiple Choice Questions in Nautical Science:**

71. For which vessel is the SOLAS Convention applicable?
- Fishing vessel fishing in Greenland waters
  - Container feeder vessel 1000 GT trading between UK Ports London and Southampton
  - War-Ship of 1500 GT in international trade
  - Coaster 501 GT trading between Kingston (Jamaica) and San Juan (Puerto Rico)
72. Who is NOT involved in verifying compliance with the ISM Code?
- Recognized Organizations acting on behalf of flag States
  - SOLAS Contracting Governments as flag States
  - International Maritime Organization (IMO)
  - SOLAS Contracting Governments as port States
73. The responsibility and authority of the Designated Person (DPA) includes:
- Performing of master's reviews
  - Dealing with all matters concerning the daily operation of the ships
  - Performing of management reviews
  - Monitoring the safety and pollution prevention aspects of each company ship
74. Risk assessment of the operation of a vessel includes:
- Performance of an internal audit, assessment of its results and implementation of corrective measures
  - Review of the safety management system including follow up measures
  - Identification of operational hazards, existing risk control measures and determination of risks
  - Performance of a practical exercise and evaluation of its result
75. The objective of investigating accidents, non-conformities and hazardous occurrences is:
- To investigate who has made a mistake and who has to be blamed
  - To investigate the competence of the personnel in the response to the incident
  - To have a record available as objective evidence for the auditor
  - To investigate the root cause and to identify measures to prevent recurrence

**Multiple Choice Questions in Naval Architecture**

76. A ship has a moulded breadth of 30.00 m and an extreme breadth of 30.04 m. The thickness of the side shell plating is:



- (a) 40 mm
- (b) 30 mm
- (c) 20 mm
- (d) 10 mm.

77. The displacement of a ship is 10250 tonnes. Therefore,
- (a) the total mass of the ship is 10250 tonnes
  - (b) the volume of sea water of density 1025 kg per m<sup>3</sup> displaced by the ship is 10000 m<sup>3</sup>
  - (c) the buoyancy of the ship is 10250 x 9.81 kN, the gravitational acceleration being 9.81 m per sec<sup>2</sup>
  - (d) All of these.
78. The deadweight of a ship includes:
- (a) the weight of the hull structure
  - (b) any water ballast being carried
  - (c) the weight of the propulsion plant
  - (d) None of these.
79. In the lines plan of a ship, the intersections of the hull surface by horizontal planes are called:
- (a) waterlines
  - (b) stations
  - (c) buttock lines
  - (d) diagonals
80. Camber describes:
- (a) the curvature of a deck in the longitudinal direction
  - (b) the curvature of a deck in the transverse direction
  - (c) the curvature of the bottom plating
  - (d) the curvature of the side plating