

INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)
Entrance Examination for Admission to Ph.D/ MS (By Research)

Subject Name: MARINE ENGINEERING
Time: 2 Hours

Maximum Marks: 120

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 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 provided 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.

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

1. The monthly incomes of X and Y are in the ratio of 4:3 and their monthly expenses are in the ratio of 3:2. However, each saves Rs. 6000/-per month. What is their total monthly income?
 - (a) Rs. 28,000/-
 - (b) Rs. 42,000/-
 - (c) Rs. 56,000/-
 - (d) Rs. 84,000/-

2. Suppose the average weight of 9 persons is 50 kg. The average weight of the first 5 persons is 45 kg, whereas the average weight of the last 5 persons is 55 kg. Then, the weight of the 5th person will be
 - (a) 45 kg
 - (b) 47.5 kg
 - (c) 50 kg
 - (d) 52.5 kg

3. What is the value of x in the following logarithm equation?
 $\text{Log}(x+2) - \log(x-1) = \log 2$
 - (a) 5
 - (b) 4
 - (c) 3
 - (d) 2

4. "Price is not the same thing as value. Suppose that on a day the price of everything viz., coal, bread, postage stamps, the taxi fare, the rent of houses etc. were to double. Prices then would certainly rise, but values of all things except one would not."
The writer wants to say that if prices of all things were doubled,
 - (a) the values of all things would remain constant.

- (b) the values of the things sold would be doubled.
- (c) the values of all things bought would be halved.
- (d) the values of money only would be halved.

5. During the last summer vacation, John went to a summer camp where he took part in hiking, swimming and boating. This summer, he is looking forward to a music camp where he hopes to sing, dance and learn to play the guitar. Based on the above information, four conclusions as given below, have been made.

Which one of these logically follows from the information given above?

- (a) John's parents want him to play the guitar.
- (b) John prefers music to outdoor activities.
- (c) John goes to some type of camp every summer.
- (d) John likes to sing and dance.

6. The number of deaths among the army personnel is 8 in 1000, but among the civilian population, it is 20 per 100. Which of the following inferences can be drawn from this statement?

- (a) It is better to join the army.
- (b) The relationship is fortuitous.
- (c) Quality of Life Index is very high within the armed forces.
- (d) The groups can't be compared due to their heterogeneity.

7. A person walks 12 km due north, then 15 km due east, after that 19 km due west and then 15 km due south. How far is he from the starting point?

- (a) 5 km
- (b) 9 km
- (c) 12 km
- (d) 15 km

8. The sum of income of A and B is more than that of C and D taken together. The sum of income of A and C is the same as that of B and D taken together.

Moreover, A earns half as much as the sum of the income of B and D, whose income is the highest?

- (a) A
- (b) B
- (c) C
- (d) D

9. As per agreement with a bank, a businessman had to refund a loan in some equal installments without interest. After paying 18 installments he found that 60% of his loan was refunded. How many installments were there in the agreement?

- (a) 22
- (b) 24
- (c) 30
- (d) 32

10. A gardener increased the area of his rectangular garden by increasing its length by 40% and decreasing its width by 20%. The area of the new garden is

- (a) has increased by 20%.
- (b) has increased by 12%.
- (c) has increased by 10%.
- (d) remains exactly the same as the old area.

11. In a meeting, the map of a village was placed in such a manner that south-east becomes north, north-east becomes west and so on. What will south become?

- (a) North.
- (b) North-east.
- (c) North-west.
- (d) West.

12. Running at a speed of 60 km per hour, a train passed through a 1.5 km long tunnel in two minutes. What is the length of the train?

- (a) 200 m.

- (b) 300 m.
- (c) 500 m.
- (d) 800 m.

13. Aditya attempted 12 questions in the examination for Science paper and secured full marks in all of them. If he obtained 60% in the test and all the questions carried equal marks, then what is the number of questions in the test?

- (a) 20.
- (b) 22.
- (c) 24.
- (d) 30.

14. Lead, ingested or inhaled, is a health hazard. After the addition of lead to petrol has been banned, what still are the sources of lead poisoning?

1. Smelting unit.
2. Pens and pencils.
3. Paints.
4. Hair oils and cosmetics.

Select the correct answer from the choices given below?

- (a) 1 and 3 only.
- (b) 1, 2 and 3 only.
- (c) 2 and 4 only.
- (d) All of above (1, 2, 3 and 4).

15. Rainbow is produced when sunlight falls on drops of rain. Which of the following physical phenomenon are responsible for this?

1. Dispersion.
2. Refraction.
3. Internal reflection.

Select the correct answer from the choices given below?

- (a) 1 and 2 only.
- (b) 2 and 3 only.
- (c) 1 and 3 only.
- (d) All of above (1, 2 and 3).

16. The known forces of nature can be divided into four classes, viz. gravity, electromagnetism, weak nuclear forces and strong nuclear forces. With reference to them, which one of the following statements is not correct?
- (a) Gravity is the strongest of the four.
 - (b) Electromagnetism acts only on particles with an electric charge.
 - (c) Weak nuclear force causes radioactivity.
 - (d) Strong nuclear force holds protons and neutrons inside the nucleus of an atom.
17. Acid rain is caused by the pollution of environment by:
- (a) Carbon dioxide and Nitrogen.
 - (b) Carbon monoxide and Carbon dioxide.
 - (c) Ozone and Carbon dioxide.
 - (d) Nitrous oxide and Sulphur dioxide.
18. Salts of which of the following elements provide colour to the fireworks:
- (a). Zinc and Sulphur.
 - (b). Potassium and Mercury.
 - (c). Strontium and Barium.
 - (d). Chromium and Nickel.
19. Which one of the following is the correct sequence of the given substances in the order of their densities?
- (a). Steel>Mercury>Gold
 - (b). Gold >Mercury> Steel
 - (c). Steel> Gold > Mercury
 - (d). Gold > Steel > Mercury

20. In addition to fingerprint scanning, which of the following can be used in the biometric identification of a person?

1. Iris scanning.
2. Retinal scanning.
3. Voice recognition.

Select the correct answer from the choices given below?

- (a) 1 only.
- (b) 2 and 3 only.
- (c) 1 and 3 only.
- (d) All of above (1, 2 and 3).

21. The principle on which Optical fibre works is:

- (a) Total internal reflection.
- (b) Scattering.
- (c) Refraction.
- (d) Interference.

22. Diffusion of light in the atmosphere takes place due to which of the following:

- (a) Carbon dioxide.
- (b) Dust particles.
- (c) Helium.
- (d) Water vapour.

23. Which of the following is/are the example(s) of chemical change?

1. Crystallization of sodium chloride.
2. Melting of ice.
3. Souring of milk.

Select the correct answer from the choices given below?

- (a) 1 and 2 only.

- (b) 3 only.
- (c) None of above (1, 2 and 3).
- (d) All of above (1, 2 and 3).

24. “If political leadership fails to emerge, there is likelihood of military taking over power in developing countries. Radical student groups or labour may try to raise revolution but they are not likely to compete with the military. Military intervention, rule, and withdrawal from politics is closely related to a society’s level of political development”

In the context of political development, the assumption in the above passage is that Political leadership is not an effective instrument.

- (b) Military fills in political vacuum.
- (c) Military intervention is inevitable for political development.
- (d) None of the above.

25. A military code writes SYSTEM as SYSMET and NEARER as AENRER. Using the same code, FRACTION can be written as:

- (a) CARFTION
- (b) FRACNOIT
- (c) NOITCARF
- (d) CARFNOIT

Maritime Sector

26. The head quarter of the international Maritime Organization is located

- (a) Geneva
- (b) New York
- (c) London
- (d) Washington

27. The International Maritime Organization is an UN body for regulating

- (a) Cargo & defence ships
- (b) Cargo & passenger ships
- (c) Canals & ports
- (d) Ships & ports

28. The largest Indian shipping company in the private sector is

- (a) Great Eastern
- (b) Shipping Corporation of India
- (c) Essar
- (d) Mercator

29. Merchant navy primarily covers

- (a) Defence of the country
- (b) Underwater exploration
- (c) Carriage of goods & passengers
- (d) Managing ports

30. Largest export from India in terms of volume is

- (a) Tea

- (b) Spices
- (c) Iron Ore
- (d)garments

31. Largest import to India in terms of volume is

- (a) Crude Oil
- (b) Grains
- (c) Cement
- (d)Fertilizer

32. Sagarmala is a significant project for

- (a) Connecting Ports
- (b) Improving infrastructure
- (c) Improving logistics
- (d) All of these

33. What is special about an Indian Team which recently circumnavigated the world in a sailing boat?

- (a) All Girl team of 6 Indian Naval officers
- (b) 03 male and 03 female Indian Naval officers
- (c) All men team of 6 Indian Naval officers
- (d) All Girl team of 6 Indian officers, 02 from Navy, 02 from Army and 02 from Air Force.

34. Who became the first Indian woman to receive IMO's Exceptional Bravery Award at Sea?

- (a) Captain S. Nilkeni
- (b) Captain Ruchika Malhotra
- (c) Captain Monika Mehrotra
- (d) Captain Radhika Menon

35. Panama Canal connects

- (a) Atlantic Ocean & Mediterranean Sea
- (b) Atlantic Ocean & Gulf of Mexico
- (c) Pacific Ocean & Atlantic Ocean
- (d) Mediterranean Sea & Red Sea

36. The continent through which all three imaginary lines, e.g. Equator, Tropic of Cancer and Tropic of Capricorn pass through is

- (a) Africa
- (b) Asia
- (c) Europe
- (d) Australia

37. First ship built in an Indian shipyard is

- (a) Loyalty
- (b) Rajendra
- (c) Jal Usha
- (d) Vikrant

38. The accident of Titanic led to the development of which international convention

- (a) SOLAS
- (b) loadline
- (c) MARPOL
- (d) STCW

39. Indian Maritime University has campuses in

- (a) Chennai & Mumbai

- (b) Chennai & Kolkata
- (c) Chennai & Kochi
- (d) All of these

40. For carrying cargo the ship owner earns

- (a) Freight
- (b) Demurrage
- (c) Hire
- (d) Dispatch

41. Bunkering is the process of

- (a) Refueling the ship
- (b) Loading the ship
- (c) Unloading the ship
- (d) Inspecting the ship

42. Rudder is used in ship for

- (a) Moving the ship
- (b) Turning the ship
- (c) Increasing the ship's speed
- (d) Stopping the ship

43. Sea water as ballast is used in ships for

- (a) Maintaining stability of a ship
- (b) when transmitting a distress message
- (c) Cooling of the engines of a ship
- (d) For converting to potable water

44. Main thrust for development and adoption of ISM Code came from the findings of accident involving

- (a) The Herald of Free Enterprise
- (b) Scandinavian Star
- (c) Exxon Valdez
- (d) Amoco Cadiz

45. The ISM Code is mandatory on ships and refers to the

- (a) International Shipping Market
- (b) International Seafarer's Management
- (c) Inter Shipping Management
- (d) International Safety Management

46. Master has the overriding authority and the responsibility to make decisions with respect to

- (a) Pollution prevention
- (b) Safety of the Ship
- (c) Safety and Pollution prevention
- (d) None of these

47. In a radio transmission from a ship 'Roger' means

- (a) I understand you
- (b) I agree with you
- (c) I hear you
- (d) I see you

48. 'Mayday' signal is used in shipping

- (a) when there is more than one emergency
- (b) when transmitting a distress message
- (c) Greeting another passing ship
- (d) Informing the authorities that all is well on board

49. The share of the Indian seafarers in the world is

- (a) 15%
- (b) 12%
- (c) 5%
- (d) 8%

50. Largest shipping company in the world is

- (A) Maersk
- (b) MSC
- (c) Evergreen
- (d) Mitsui OSK

51. The HQ of Directorate General of Shipping is located at

- (a) Chennai
- (b) New Delhi
- (c) Kolkata
- (d) Mumbai

52. Alang is famous for

- (a) Largest Indian Port
- (b) Ship Breaking
- (c) Ship building
- (d) Ship repairing

53. Anchor is used in ship for

- (a) Keeping the ship in one place
- (b) Securing the ship
- (c) Tying the ship with shore
- (d) Decorating the ship

54. Which of the following may be used as fuel in the engines of a ship

- (a) High Speed Oil
- (b) Furnace Oil
- (c) Diesel Oil
- (d) All of these

55. Iron ore is carried in

- (a) Bulk carriers
- (b) Oil Tankers
- (c) Container ships
- (d) General cargo ships

56. Computer are used onboard for

- (a) Marine communication
- (b) ship to shore communication
- (c) shore to ship communication
- (d) All of these

57. Which of the following are the types of ships

- (a) RORO
- (b) Reefer

- (c) Heavy Lift
- (d) All of these

58. Overall command of the ship is with Master who is the

- (a) Ship Manager
- (b) Chief Engineer
- (c) Captain
- (d) Harbour Master

59. The Indian Maritime University was established in

- (a) 2009
- (b) 2008
- (c) 2010
- (d) 2011

60. MS Act stands for

- (a) Merchant Shipping Act
- (b) Merchant Seamen Act
- (c) Marine Surveyors' Act
- (d) Maritime Shipping Act

Multiple Choice Questions in Marine Engineering

61. Modern marine turbochargers use a _____ type of compressor
- a) Radial flow
 - b) Axial flow
 - c) Turbulent flow
 - d) Mixed flow
62. In a direct connected or geared main propulsion diesel engine would be fitted with a
- a) Isochronous hunting governor
 - b) Rotating governor disc
 - c) Variable speed governor
 - d) Constant frequency governor
63. Which of the following functions is done by a cam operating an exhaust valve?
- a) It governs the timing of opening and closing of the valve.
 - b) It governs the speed at which the valve operates
 - c) It governs the amount of opening of the valve
 - d) All of the above
64. Which of the following actions takes place in the control circuit of an automatically fired auxiliary boiler when the desired steam pressure is obtained?
- a) A temperature sensing device opens the circuit breaker in the burner motor.
 - b) The high limit control secures power to the entire oil firing system.
 - c) The stack relay actuates the low limit control which breaks the ignition circuit.
 - d) The stack relay secures power to the high voltage side of the ignition transformer.
65. A diesel engine should not be operated at low loads for long periods of time because

- a) Heavy carbon deposits will buildup on the valves and in the exhaust
- b) Fuel dilution is increased at low load
- c) Exhaust valves may be damaged
- d) all of the above

66. The main function of tie rods in the construction of large, low speed diesel engines is to

- a) Stiffen the bedplate in way of the main bearings to increase the engine's longitudinal strength
- b) Accept most of the tensile loading that results from the firing forces developed during operation
- c) Mount the engine frame securely to the hull to prevent shaft coupling misalignment
- d) Connect the crosshead solidly to the piston rod

67. In order for microbiological growths to thrive in a fuel tank it is necessary for

- a) High temperatures to exist
- b) Low temperatures to exist
- c) Small amounts of water to be present
- d) Large amounts of water to be present

68. Which of the following statements correctly describes the phenomenon of surging in a 2- stroke crosshead type engine?

- a) Due to sudden increase in engine load the exhaust gases may flow back through scavenge ports causing surge
- b) Due to sudden decrease in engine load the turbocharger pressure ratio drops. This causes high pressure downstream of T/C in scavenge trunk causing flow reversal of scavenge air
- c) Due to sudden increase in engine load, the T/C turbine rpm may increase suddenly increasing the compressor pressure ratio to surge
- d) Due to sudden decrease in engine load, the turbocharger may stall as the higher pressure downstream in exhaust system may cause reversal of flow of exhaust gases

69. Which of the following will be required to be done in order to reduce sulphur corrosion of Main Engine components

- a) Increasing the atomization pressure of fuel injectors
- b) Fitting exhaust valves with valve rotators
- c) Running engine at or near normal sea load
- d) All of the above

70. In order to reduce thermal loading on the upper part of the liner and increase the effectiveness of Cylinder lubrication, modern 2-stroke marine diesel engines are designed to have

- a) Cermet coated piston rings, bore cooled liners and uniflow scavenging
- b) High top land of piston crown and deeper cylinder cover with top land of crown extending into cylinder cover at TDC
- c) Low top land of the piston crown with bore cooled cylinder liner
- d) Bore cooled cylinder liner and bore cooled piston crown with toroidal shape combustion chamber

71. For simple harmonic motion Acceleration is directly depend upon,

- a) Displacement
- b) Amplitude
- c) Linear velocity
- d) Frequency

72. Critical damping depend upon

- a) Stiffness and amplitude
- b) Mass and stiffness
- c) Stiffness and viscosity of medium
- d) Mass and frequency of system

73. In an isothermal atmosphere, the pressure

- a) Varies with temperature
- b) Varies linearly with density
- c) remains constant
- d) Decrease with elevation

74. Piezometer is used to measure

- a) Low pressure
- b) Gas pressure
- c) Atmospheric pressure
- d) High pressure

75. Ratio of inertia force to surface tension is known as

- a) Weber's Number
- b) Mach number
- c) Froude number
- d) Euler number

76. Center of pressure for an inclined plane is always

- a) At Metacenter
- b) Below the centroid
- c) Above Metacenter
- d) Above the centroid

77. Drag and lift force experienced by an object in a fluid flow is due to

- a) Viscosity and turbulence
- b) Pressure and Turbulence
- c) Pressure and skin friction
- d) Pressure and Viscosity

78. The center of buoyancy is

- A) Centroid of displaced volume of fluid
- B) A point slightly above Metacenter
- C) Center of gravity of the body
- D) None of the above

79. Mixed flow turbines are basically

- a) Radial inward flow turbines
- b) Radial outward flow turbines
- c) Parallel flow turbines
- d) Partly Axial and partly radial turbines

80. Critical speed of turbine is

- a) Speed at which the natural frequency becomes equal to revolution per minute
- b) Speed at which turbine operates
- c) Speed equal to generator speed
- d) Speed at which shaft failure occurs

81. Cavitation can be avoided in centrifugal pump, if

- a) Suction pressure is low
- b) Suction pressure is high
- c) Delivery pressure is low
- d) Delivery pressure is high

82. Which of the following does not change during throttling process

- a) Internal energy
- b) Pressure
- c) Entropy
- d) Enthalpy

83. Atmosphere of a tank or pump room can be tested by using

- a) Explosive meter
- b) Piezometer
- c) Anemometer
- d) Pyrometer

84. Carbon Monoxide Threshold Limit value is

- a) 25 PPM
- b) 40 PPM
- c) 50 PPM
- d) 90 PPM

85. Sprinkler head Quartzoid bulb yellow in color can with stand up to

- a) 68° C
- b) 79° C
- c) 88° C
- d) 99° C

86. Important consideration in the design of Gas Turbine blade is

- a) Air fuel ratio
- b) Outlet temperature
- c) Inlet temperature
- d) Creep

87. Noise level in continuous manned machinery space, should be below

- a) 76 dB
- b) 90 dB
- c) 102 dB
- d) 110 dB

88. In SCABA volume of air contained in a cylinder is atleast

- a) 900 ltrs
- b) 1000 ltrs
- c) 1100 ltrs
- d) 1200 ltrs

89. Flash point of Marine Diesel Oil is

- a) 43° C
- b) 64° C
- c) 71° C
- d) 89° C

90. Opening pressure of crank case door relief valve of Marine IC engine

- a) 0.06 bar above atmospheric pressure
- b) 0.07 bar above atmospheric pressure
- c) 0.7 bar above atmospheric pressure
- d) 1.2 bar above atmospheric pressure

91. Absolute Humidity is usually expressed in

- a) g/cm³
- b) g/mm³
- c) g/m³
- d) mg/m³

92. Material which exhibits the same elastic properties in all directions is known as

- a) Thixotropic
- b) Heterogenous
- c) Isotropic
- d) Visco - elastic

93. The purpose of Idler Pulley is

- a) To maintain belt tension
- b) For starting motion of pulley
- c) For stopping motion frequently
- d) For changing motion to 90°

94. Rated life of a ball bearing varies as

- a) Square of load
- b) Cube of load
- c) Inversely of cube of load
- d) Inverse of load

95. An instrument used to record the vibration is

- a) Anemometer
- b) Seismometer
- c) Pyrometer
- d) Pyrheliometer

96. EEOI abbreviation for

- a) Engine Energy Operational Input
- b) Economic Engine Orbit Index
- c) Energy Efficiency Operational Index
- d) Ecology Efficient Occurrence Input

97. A device used to store energy of liquid under pressure and make available to Hydraulic machines is called

- a) Hydraulic Accumulator
- b) Hydraulic Intensifier
- c) Hydraulic Ram
- d) Hydraulic Coupling

98. What do you mean by surge limit of a turbocharger?

- a) Characteristic curve of a turbocharger

- b) Portion of compressor characteristic curve which lies on the left side of the point of maximum pressure.
- c) A line joining all the points of maximum pressure on compressor characteristic curves, drawn at various speeds of operation
- d) Maximum rpm limit of T/C above which surging will start

99. The arrangement used to protect overheating of the superheaters under fluctuating loads is called

- a) De-superheater
- b) Attemperator
- c) Steam dumping valve
- d) Feed heater

100. In a naturally aspirated diesel engine, the volume of air intake is directly related to engine

- a) Compression ratio
- b) Valve size
- c) Fuel pressure
- d) Cylinder clearance volume

101. In a VIT equipped jerk type fuel pump:

- a) Raising the barrel delays beginning of injection
- b) Lowering the barrel delays beginning of injection
- c) Raising the barrel delays end of injection
- d) Lowering the barrel delays end of injection

102. Which of the following is an adhesive type wear of a cylinder liner?

- a) Clover- leafing
- b) Scoring
- c) Scuffing
- d) Ovality

103. Duplication of power units, fittings and piping's where each unit is capable of providing 100% steering power, and automatic isolation of one unit in the event of a leakage (single failure) in that unit would constitute 100% redundancy for the steering gear system. Such system is mandatory on

- a) All tankers
- b) Tankers above 10000 GT

- c) Tankers above 100000 Dwt
- d) All ships above

104. Variable geometry turbocharging is the preferred choice over conventional turbochargers because:

- a) T/C efficiency is very high at high engine loads
- b) T/C has good starting characteristics while efficiency at full loads is slightly compromised
- c) T/C efficiency is optimized for different engine loads by changing nozzle ring geometry
- d) T/C is much cheaper and simple to manufacture and is virtually maintenance free

105. The minimum concentration of vapour in air which can form a explosive mixture is called the

- a) Auto- Ignition point
- b) Flammable limit
- c) LEL
- d) LFL

106. Curves of immersed cross-sectional area of a ship, plotted against draught for each transverse section, are known as

- a) Cross curves of Stability
- b) Displacement Curves
- c) Hydrostatic Curves
- d) Bonjean Curves

107. As per conditions of assignments, the minimum height of air pipe openings must be _____ on the freeboard deck

- a) 380 mm
- b) 450 mm
- c) 600 mm
- d) 760 mm

108. Which of the following is true concerning the Poly Phase Synchronous Propulsion motor

- a) The motor is started as an induction motor
- b) Resistance is gradually added to the rotor circuit

- c) The starting current is held below the rated current
- d) The field winding is energized for starting purpose only

109. Intact stability booklet is provided by

- a) SOLAS
- b) MARPOL
- c) Load Line convention
- d) Load Line Protocol

110. The validity of International Energy efficiency certificate is

- a) 3 Years
- b) 5 years
- c) 10 years
- d) Unlimited

111. Under Maritime instrument is a certificate of Financial Responsibility (COFR) Issued

- a) CLC 1992
- b) Fund Convention
- c) LLMC
- d) OPA 1990

112. In Tier III the maximum amount of NO_x for engine speed of less than 130 RPM is

- a) 7.4 gm/kw-hr
- b) 4.4 gm/kw-hr
- c) 3.4 gm/kw-hr
- d) 4.3 gm/kw-hr

113. As per MARPOL Annex V - the Antarctic Area means the Sea Area

- a) South of Latitude 60° S.
- b) South of Latitude 80° N.
- c) North of Latitude 60° S.
- d) North of Latitude 50° N

114. A crankshaft whose center of gravity coincides with its center line is said to be

- a) Dynamically balanced
- b) Statically balanced

- c) Counter balanced
- d) Resonantly balanced

115. Generally Inclining experiment is conducted to determine the

- a) Vertical position of the Center of Gravity
- b) Horizontal position of the Center of Gravity
- c) Vertical position of the Center of Buoyancy
- d) Metacentric Height

116. Appointment of DPA is a requirement under which of the following instruments?

- a) STCW code
- b) ISPS code
- c) MARPOL 73/78
- d) ISM code

117. What is added to Co₂ cylinder to avoid from freezing at subzero temp in an inflatable liferaft?

- a) Nitrogen
- b) Silica Gel
- c) Hydrogen
- d) None of the above

118. Diesel engine main and connecting rod precision bearings are made in halves. Each half exceeds one-half the bearing circumference by a small amount. The small amount is termed as

- a) Clearance
- b) Crush
- c) Pitch
- d) Interference

119. What is the crank angle between any two crank throws in the firing order of a four-stroke/cycle, in line, eight cylinder diesel engine?

- a) 45 degree
- b) 60 degree
- c) 90 degree
- d) 100 degree

120. EPC 70 considered an assessment of fuel oil availability to inform the decision to be taken by the Parties to MARPOL Annex VI, and decided that the fuel oil standard (0.50% sulphur limit) shall become effective on

- a) 1 February 2019
- b) 1 August 2020
- c) 1 January 2020
- d) 31 August 2019