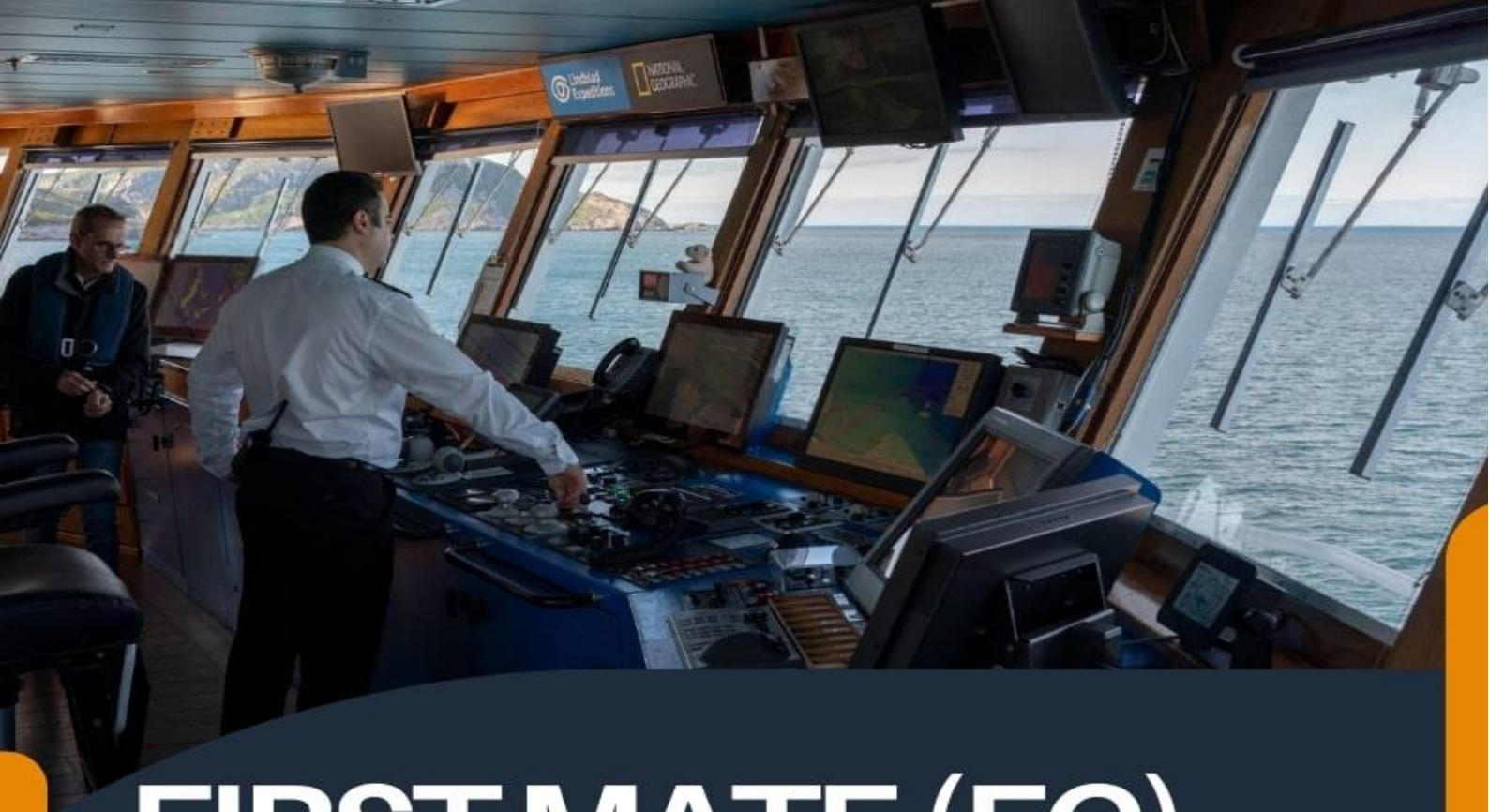

FIRST MATE (FG) PHASE- I WRITTEN :

METEREOLOGY (FG)

FOR INDIAN COMPETENCY EXAM

D. MARINE
Study Material

www.dmarinestudy.com

Paper-1 Date: - 10th Jan-2024

FIRST MATE OF A FOREIGN GOING SHIP (PHASE – I)
FUNCTION: NAVIGATION (Management Level)
PAPER: METEOROLOGY

Notes:
1. Question No. 1 is compulsory.
2. Attempt any FOUR questions from the remaining 5 Questions.
3. All questions carry equal marks i.e. 20 marks each.
4. Use Admiralty Tide Tables 1992 Edition (ATT 1992)

Q.1) Find the height of tide at 0800 hrs. L.T. on 19th April 1992 at port Sultanpur (No. 4344 ATT-II) by simple harmonic method.
Click Here to See the Answer

Q.2) a) With respect to a TRS explain:
i) Tropical depression
ii) Path
iii) Eye wall
iv) Navigable quadrant
v) Vertical wind shear
vi) Characteristic and Alternate path
b) What action to be taken if vessel is inside navigable quadrant in the southern hemisphere.
Click Here to See the Answer

Q.3) Write short notes on:
i) Prognostic charts
ii) Wave refraction
iii) Frontolysis

Q.4) Describe the various stages in the development of sea ice by making use of a block diagram.
Click Here to See the Answer

Q.5) Describe with suitable sketch the Ocean currents of North and South Pacific Ocean. Also identify the warm and cold currents.
Click Here to See the Answer

Q.6) Identify the various types of weather routing services available for shipping and describe any one
of them.

Click Here to See the Answer

Paper-2 Date: - 10th Jan-2024

FIRST MATE OF A FOREIGN GOING SHIP (PHASE – I)
FUNCTION: NAVIGATION (Management Level)
PAPER: METEOROLOGY

Notes:
1. Question No. 1 is compulsory.
2. Attempt any FOUR questions from the remaining 5 Questions.
3. All questions carry equal marks i.e. 20 marks each.
4. Use Admiralty Tide Tables 1992 Edition (ATT 1992)

Q.1) Calculate height of tide at 1136 hrs LT on 29th March 1992 at Ramsgate (#102).
Click Here to See the Answer

Q.2) a) Explain the structure of a tropical revolving storm with a neat sketch. Describe the weather conditions associated with the 'eye' and 'eye wall'.
b) Describe the practical rules for avoiding eye of a TRS in the southern hemisphere. Support your answer with neat sketches.
Click Here to See the Answer

Q.3) Write short notes on following:
a) Depletion of ozone layer and its impact on environment.
b) Frontogenesis and Frontolysis and its significance to the mariner.
Click Here to See the Answer

Q.4) a) Write short notes on:
i) Temperature Inversion ii) Radiation Fog
b) Describe the function of International Ice Patrol.
Click Here to See the Answer

Q.5) a) Describe the surface current circulation in the North Atlantic Ocean along with the causes of formation of these currents.
b) How is a frontal depression formed? What is the weather associate with a warm front?
Click Here to See the Answer

Q.6) a) Enumerate the factors to be taken into consideration for ship's weather routeing?
b) Discuss how weather routing helps in the safe navigation of the vessel.
Click Here to See the Answer

Date: - 4th April-2024

FIRST MATE OF A FOREIGN GOING SHIP (PHASE – I)
FUNCTION: NAVIGATION (Management Level)
PAPER: METEOROLOGY

Notes:
1. Question No. 1 is compulsory.
2. Attempt any FOUR questions from the remaining 5 Questions.
3. All questions carry equal marks i.e. 20 marks each.
4. Use Admiralty Tide Tables 1992 Edition (ATT 1992)

Q.1) Find the height of tide at 2130 hours LT on 11th February 1992 at port Bhavnagar (No.4346 ATT-II) by simple harmonic method.
Click Here to See the Answer

Q.2) a) Give the names of the TRS in different parts of the world.
b) Explain action to be taken if vessel is inside dangerous quadrant in the northern hemisphere.
Click Here to See the Answer

Q.3) a) Write short notes on:
i) Synoptic charts
ii) Wave nomogram
b) Describe in details Frontogenesis with suitable sketches.
Click Here to See the Answer

Q.4) a) Discuss with the aid of suitable sketches the normal season and probable movement of North Atlantic Icebergs from birth to decay.
b) Explain the purpose, duties and responsibilities of International Ice Patrol.
Click Here to See the Answer

Q.5) a) Sketch and describe the currents of the South Indian Ocean. Also identify the warm and cold currents.
b) Describe the various forms of depicting ocean currents on charts.
Click Here to See the Answer

Q.6) a) Describe optimum routing and explain the methods used onboard ship for weather routing.
b) Describe significant wave height and the factors that influence the height of wave.
Click Here to See the Answer

AM PAPER 10th July-2024

FIRST MATE OF A FOREIGN GOING SHIP (PHASE – I)
FUNCTION: NAVIGATION (Management Level)
PAPER: METEOROLOGY

Notes:
1. Question No. 1 is compulsory.
2. Attempt any FOUR questions from the remaining 5 Questions.
3. All questions carry equal marks i.e. 20 marks each.
4. Use Admiralty Tide Tables 1992 Edition (ATT 1992)

Q.1) Find the height of Tide at Bhavnagar (#4346) on 9th Feb'92 @ 1200 hrs by Harmonic Constant Method.
Click Here to See the Answer

Q.2) a) Explain Buy's Ballots Law, Veering and Backing.
b) Give signs of approaching TRS.
c) State your actions to avoid getting closer to the eye of TRS if you were in Southern Hemisphere.
Click Here to See the Answer

Q.3) a) Describe the effects of global warning?
b) Describe the characteristic and weather associated with the following types of clouds:
i) Altocumulus

ii) Nimbostratus
iii) Cumulonimbus
Click Here to See the Answer

Q.4) a) What do you understand by "Ice Accumulation"?
b) What precautions would you take to minimize ice accumulation on board?
Click Here to See the Answer

Q.5) What are the primary factors influencing the motion of surface currents. What is the indirect effectof wind on the surface currents & how do they affect the strength of currents as well as local climate?
Click Here to See the Answer

Q.6) Your ship, a bulk carrier, carrying steel cargo is due to sail from Southampton to New York in the month of December. What all are the factors you will consider regarding weather routeing if your passage across the Atlantic Ocean?
Click Here to See the Answer

PM PAPER 10th July-2024

FIRST MATE OF A FOREIGN GOING SHIP (PHASE – I)
FUNCTION: NAVIGATION (Management Level)
PAPER: METEOROLOGY

Notes:
1. Question No. 1 is compulsory.
2. Attempt any FOUR questions from the remaining 5 Questions.
3. All questions carry equal marks i.e. 20 marks each.
4. Use Admiralty Tide Tables 1992 Edition (ATT 1992)

Q.1) Find the height of tide at 0230 hours LT on 9th January 1992 at port Apollo bandar (No. 4359 ATT- II) by simple harmonic method.
Click Here to See the Answer

Q.2) a) State the typical signs of an approaching TRS and describe the messages required to be sent as per SOLAS.

b) What action to be taken if vessel in southern hemisphere is in the path of the storm and presently experiencing winds BF scale 5. Assume navigable waters all around.
Click Here to See the Answer

Q.3) Write short notes on:
i) Air mass types
ii) Types of clouds associated with warm front of a TLD.
iii) Global warming.
Click Here to See the Answer

Q.4) Explain the precautions to be taken when navigating in or near an area affected by sea ice.
Click Here to See the Answer

Q.5) Describe with suitable sketch the Ocean currents of North Atlantic Ocean. Identify the warm and cold currents.
Click Here to See the Answer

Q.6) a) Describe Significant wave height and fetch.
b) Explain the method of Shipboard weather routing with suitable diagrams.
Click Here to See the Answer

AM PAPER DATE-4th Oct-2024

FIRST MATE OF A FOREIGN GOING SHIP (PHASE – I)
FUNCTION: NAVIGATION (Management Level)
PAPER: METEOROLOGY

Notes:
1. Question No. 1 is compulsory.
2. Attempt any FOUR questions from the remaining 5 Questions.
3. All questions carry equal marks i.e. 20 marks each.
4. Use Admiralty Tide Tables 1992 Edition (ATT 1992)

Q.1) Using Simplified Harmonic Constant Method find height of tide at Hoek Van Holand (No. 1505, ATT Vol.1) at 0800 hours on 13th March 1992.
Click Here to See the Answer

Q.2) a) Explain conditions associated with formation of a Tropical Revolving Storm.
b) Sketch and describe isobars and wind circulation in a depression.
Click Here to See the Answer

Q.3 a) Write short notes on:
i) Synoptic charts
ii) Wave nomogram
b) Describe in details Frontogenesis with suitable sketches.
Click Here to See the Answer

Q.4 a) Explain with sketches, the formation of Benguela Current on the West coast of Africa.
b) Explain with reason the flow of surface and under current in strait of Gibraltar.
Click Here to See the Answer

Q.5 a) List the information given in Shipping Forecast issued for coastal areas.
b) Explain the cause of Gradient Current.
Click Here to See the Answer

Q.6 Your ship, a bulk carrier, carrying steel cargo is due to sail from Southampton to New York in the month of December. What all are the factors you will consider regarding weather routeing for your passage across the Atlantic Ocean?

Click Here to See the Answer

FUNCTION: NAVIGATION (Management Level)
PAPER: METEOROLOGY

Notes:
1. Question No. 1 is compulsory.
2. Attempt any FOUR questions from the remaining 5 Questions.
3. All questions carry equal marks i.e. 20 marks each.
4. Use Admiralty Tide Tables 1992 Edition (ATT 1992)

Q.1) Find the height of tide at 1930 hrs for Boom (ATT Vol. 1 # 1539 c) on 05th Feb 1992.
Click Here to See the Answer

Q.2) Describe in detail (with the help of a neat sketch) the conditions and values of lapse rates, which lead to stability / instability at atmosphere.
Click Here to See the Answer

Q.3) i) Explain the formation of sea ice.
ii) State the limitations of radar as a means of detecting ice.
Click Here to See the Answer

Q.4) Write short notes on following:
a) Depletion of ozone layer and its impact on environment
b) Frontolysis and its significance to the mariner.
Click Here to See the Answer

Q.5) Describe with suitable sketch the Ocean currents of North Atlantic Ocean. Identify the warm and cold currents.
Click Here to See the Answer

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Click Here to See the Answer