

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

**December 2016 End Semester Examinations**  
**Diploma in Nautical Science - First Semester (2015 batch onwards)**

**Navigation – II : Bridge Equipment, Watchkeeping and Meteorology (UD11T3105)**

**Date : 19.12.2016**

**Maximum Marks: 70**

**Time: 2 Hrs**

**Pass Marks : 35**

Note: Answer any four questions from Part A and any three Questions from Part B.

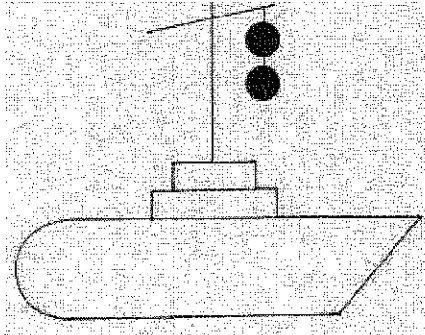
All questions carry equal marks. (7 x 10 = 70 marks)

Neat sketches / Diagrams are to be drawn as appropriate.

**SECTION- A**

**(Bridge Equipment and Watch Keeping)**

1. a) What causes Index Error in a sextant and how is it checked using the Horizon Method?  
b) Explain any two errors of an echo-sounder.
2. a) Explain what is a Gyro Error and the causes of ships speed and latitude Errors  
b) Name two advantages and three disadvantages of a magnetic compass over a gyrocompass.
3. a) Under Rule 5 of International Regulation for Prevention of Collision at sea, explain significance of phrases "at all times" and "by all available means".  
b) How many parts are the Collision Regulation made up of? Give Readings of each part and the rules covered under them.
4. Define the following-
  - a) Power-driven vessel
  - b) Sailing vessel
  - c) Vessel Underway
  - d) Vessel in sight of one another
  - e) Vessel not under command
5. a) Your ship is a power driven vessel making way at sea and from your bridge you see a ship with daylight signal as shown below. Answer the following:-
  1. What is the ship doing?
  2. Which is the Give-way vessel and what action will the *give way* vessel take?
  3. What Night signals will be shown by the other ship?
  4. What sound Signals will be made by you and the other ship in restricted visibility?



- b) Draw a sketch showing the arc of visibility of Mast Head Light, Side lights and stern light of a power driven vessel which is less than 50 meters in length.

**SECTION -B**  
**(Meteorology)**

6. a) What is atmospheric pressure and what is its unit of measurement?  
b) What is Barometric tendency? How is it expressed? What is its utility?
7. a) Draw a sketch to show why area under tropic of Capricorn is hotter than tropic of Cancer during the months of December.  
b) In point form explain how Green house effect causes Global warming clearly mentioning the most dangerous greenhouse gas.
8. a) State the formula of relative humidity and with the help of formula explain why Delhi though hotter in the month of May, is less humid than Mumbai.  
b) What is Diurnal Range of atmospheric of temperature? Why it is higher over the land than the sea.
9. a) What is height correction and with an example, explain how it is applied to a barometer reading?  
b) Name and briefly explain any two precautions to be observed while using whirling psychrometer.

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