

Please check whether you have got the right question paper.

- N.B:
1. Use of non-programmable scientific calculator is permitted.
 2. Attempt all questions and all questions carry equal marks.

1. a. The deviation on 000°C = 5°E and on Compass Heads 325°C = 3.5°E, 270°C = 4°E, Assuming No Co-efficient A and E, Calculate Co-efficient D And deviation on 160°C.

OR

- b. Describe in details Bridge Navigational Watch Alarm System.
2. a. Describe in details limitations of ARPA.

OR

- b. State the Weather effects on Radar Performance
i) Rain ii) Drizzle iii) Snow iv) Fog v) Hail
3. Write short notes on any three of the following:-

- a. Properties of sound waves in water
- b. Errors of Echo Sounder
- c. Reverberation Noise
- d. Voyage Data Recorder
- e. Description of AIS
- f. Advantages of Vector charts

4. a. Draw and describe with neat diagram of chart recording Echo Sounder.

OR

- b. Describe principle of working of GPS and its different segments
5. a. Describe (i) Magnetostriction (ii) Electrostriction

OR

- b. Write short notes on:-
(i) Differential GPS. (ii) Ship Security Alert System