

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

May/June End Semester Examinations
B.Sc. (Nautical Science) Second Semester
(AY 2013-14 to 2015- 16 batches only)

Nautical Physics - III (UG21T2205)

Date : 10.06.2017

Time: 3 Hrs

Maximum Marks: 70

Pass Marks : 35

Note: Answer any SEVEN from the following 9 Questions.

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

1. a) Define the following terms w.r.to hygrometry
i) Vapour pressure ii) Saturated vapour pressure (5)
b) Define the following: i) COP of refrigerator ii) Entropy (5)
2. a) Explain relative and absolute humidity with reference to hygrometry. (5)
b) Give any 3 applications for Doppler principle. (5)
3. a) State first and second law of thermodynamics. (5)
b) Define the following
i) Heat engine ii) Refrigerator. (5)
4. a) Explain with neat diagram, construction and working of sextant. (5)
b) Light of wavelength 3500\AA is incident on two metals A and B. Which metal will yield photo electrons if their work functions are 4.2 eV and 1.9 eV respectively? (5)
5. a) Give the applications of optical fibre in medical field. (5)
b) How does a ship's echo sounder work? (5)
6. a) Explain with neat diagram, construction and working of Azimuth mirror. (5)
b) What are the effects of different parameters on velocity of sound in air (5)

7. a) Discuss the characteristics of musical sound. (5)
- b) When a car sounding its horn of frequency 500Hz passes a stationary observer with a speed of 25 m/s, the frequency changes in the ratio 9:10. calculate the velocity of sound. (5)
8. a) Explain with neat diagram, construction and working of periscope. (5)
- b) What is a LASER? On what principle does it works? (5)
9. a) Explain h-s chart (Mollier diagram) in detail. (5)
- b) Air expands from 11 bar at 550°C to a pressure of 3 bar adiabatically. Determine temperature at the end of expansion and work done. Find also the change in entropy. (5)
