

Indian Maritime University

June-2022 semester term end question paper

Subject code : UD11T5201 Subject Name Navigation III

duration- 3Hrs Maximum marks are 70

Date – 20.06.2022

Pass Marks - 35

PART-A(Q.1 is compulsory)

Question 1

1x10 = 10 marks

MCQ types

i) If GHA sun at a date/time was 300° , observer longitude was 30°E what will be LHA sun

a) 270° b) 200° c) 330° d) 300°

ii) In Mercator chart latitude scale is marked with:

a) constant vertical spacing b) latitude scale increases with higher lat c) lat scale decreases d) increases then decreases

iii) If LMT merpass sun at any day was 1200 clock, observer's longitude was 30degree E what will be GMT merpass time a) 1200hours b) 1400hours c) 1000hours d) 1100hours

iv) Which is the first element is passage planning

a) Planning b) Execution c) Appraisal d) Monitoring

v) In meridian passage of Sun's time sun's azimuth will be

a) 001° b) 002° c) 179° d) 000°

vi) Which of the electronic chart has various layers:

a) ENC b) RNC c) SENC d) paper chart

Vii) When calculating observe longitude by chronometer you can expect that observe longitude value will be:

a) close to accurate DR position b) Far away from DR c) very far away from EP d) Away from estimated position

Viii) Zenith point in celestial sphere is just:

a) above observer b) below observer c) 90° away from observer d) at observer

ix) Loxodrome is also called as

a) True line b) Rumb line c) fault line d) curve line

X) Great circle distances on earth surfaces are:

a) greater than RL distances b) shortest distances between two points c) small distances d) Rumb line distances

PART-B (Question No.2 is compulsory)

Question 2

- a) Find out GHA of sun on date 16th January 2008 at GMT time 10 hours 30minutes? 2marks
- b) Find out GHA Aries on 1st March 2008 at 12 hours 20 minutes? 2marks
- c) Find out GMT time when LMT is 1200 hours and observer is in 90°W? 2marks
- d) Calculate the LHA star if SHA star was 16° and LHA aries then was 100°? 2marks
- e) Write names of all phases of moons ? 2marks

PART-C (Answer any 5 Questions)

Question 3

On 30 April 2008, in DR 00°00', 60° 12' W, the sun bore 080° compass when the GMT time was 11hours 00min 52 seconds, if variation was 1° W, find out deviation ?

10marks

Question 4

On 2nd September 2008, in DR 40° 28', 64°20' E, the rising sun bearing was 090° compass, If variation was 5° W, find out deviation of compass?

10marks

Question 5

On 1st May 2008, in DR 40° 22' N 179° 58' E the observed altitude of Sun's lower limb on meridian was 64° 35.9' South of the observer. If HE was 15meter, find out latitude and LOP?

10marks

Question 6

On 19th January 2008, PM at ship in DR 40°16'minutes S, 175° 31' E, the sextant altitude of the sun's lower limb was 43° 27.4'minutes when the GMT time was 03 hours 48min 00s, if HE =22m , IE 1.5' on the arc, find out the pl and observe longitude ? 10marks

Question 7

Calculate the distance along a great circle track from point A 24°00' N 074° 14' W to point B 46° 00' , 053° 45' W?

10marks

Question 8

why passage planning is important in making a successful voyage, what are the 4 elements in passage planning in detail? 10marks

Question 9

Plot light 'X' in the middle of page; Plot light 'Y' 10' east of light 'X'; Plot light 'Z' 10 mile South of light 'Y' . **(Use scale 1cm = 1NM)**

- A) plot position of Ship if light 'X' bore 000(T) x 8 miles 3mark
- B) Draw a course line to pass Light 'Z' 5miles on port side. 3mark
- C) show the position of the ship when Light 'Z' would be on port beam, also distance to go when abeam of 'Z' 4 mark