

**DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)**

**HOME SCHOOLING SELF-STUDY TEST 1**

|  |  |  |  |  |  |
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| **SUBJECT** | NAUTICAL SCIENCE | **GRADE** | 10 | **DATE** | 6/24/20 |
| **TOPIC** | MARITIME COMMUNICATIONS | **TERM 1**  **REVISION** |  | **TERM 2 CONTENT** | x |
| **TIME ALLOCATION** | 1 Hour | **TIPS TO KEEP HEALTHY**  1. **WASH YOUR HANDS** thoroughly with soap and water for at least 20 seconds. Alternatively, use hand sanitizer with an alcohol content of at least 60%.  2. **PRACTICE SOCIAL DISTANCING** – keep a distance of 1m away from other people.  3. **PRACTISE GOOD RESPIRATORY HYGIENE**: cough or sneeze into your elbow or tissue and dispose of the tissue immediately after use.  4. **TRY NOT TO TOUCH YOUR FACE.** The virus can be transferred from your hands to your nose, mouth and eyes. It can then enter your body and make you sick.  5. **STAY AT HOME.** | | | |
| **INSTRUCTIONS** | 1. **All** relevant working must be shown in your exercise/activity book.  2. **ALL** work done on the chart must be done lightly with a 2B pencil **ONLY**.  3. The attached extracts from nautical tables are to be used where applicable.  4. The use of scientific calculators is permitted.  5. Courses, bearings and corrections must be calculated to the nearest degree and plotted to a similar accuracy.  6. Use the **Variation** specified in the questions, and the attached deviation card is to be used.  7. It is in your own best interest to write legibly and present your work neatly. |

Question 1

* 1. Define navigation. (3)
  2. List three (3) duties of a Navigator onboard ship. (3)
  3. Unpack the acronym/abbreviation ‘GPS’ (3)
  4. Name the primary pieces of information provide by a GPS set. (3)
  5. Explain the basic principle of operation of an echo sounder. (3)
  6. The speed of sound in water is 1500m/s. Time between transmission and reception of signal is 5 seconds.

Calculate the depth of water. (3)

* 1. Determining location of areas of dramatic temperature change is one of the functions of an echo sounder.

List three (3) more functions/uses of an echo sounder. (3)

* 1. Unpack the acronym/abbreviation ‘RADAR’ (3)
  2. Explain the basic principle of operation of radar. (3)
  3. Name two (2) primary functions of a radar system. (2)
  4. What typical information can one expect to see displayed on a ship’s log display screen (2)
  5. Name two (2) types of ship-borne compasses. (2)
  6. Identify the compass used to take the following bearing:

1. 322° (T) (1)
2. 270° (M) (1)
3. 045° (C) (1)

Question 2

Calculate true course, variation, magnetic course, deviation, and compass course as required.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | a | b | c | d | e |  |
| 2.1 | **T** | 343 | 002 |  | 191 | 004 | (1) |
| 2.2 | **V** |  | 005E | 017W | 003E |  | (4) |
| 2.3 | **M** | 322 |  | 200 |  | 352 | (2) |
| 2.4 | **D** | 003E | 007W |  |  |  | (6) |
| 2.5 | **C** |  |  | 202 | 083 | 354 | (2) |

Question 3

3.1 The Equator divides the earth into the \_\_\_\_\_ and \_\_\_\_\_ hemispheres. (2)

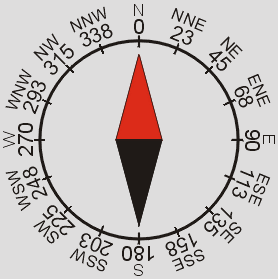
* 1. The Greenwich meridian divides the earth into the \_\_\_\_\_ and \_\_\_\_\_ hemispheres. (2)

3.3 Using D.Lat and D.Long calculation conventions, find the distance between Sydney and Honolulu.

*Sydney (F): (*33° *52’S, 151*° 13’E) *and Honolulu (T): (21*° 18’N, 157° 52’W). (10)

Question 4

Complete the compass card/rose by supplying the appropriate cardinal or inter-cardinal point name and/or degrees. (10)



(h)

(e)

(b)

(a)

(d)

(f)

(i)

(c)

(g)

(j)

**= END =**