

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

**HOME SCHOOLING SELF-STUDY WORKSHEET ANSWER SHEET**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SUBJECT** | NAUTICAL SCIENCE | **GRADE** | 10 | **DATE** | 6/4/20 |
| **TOPIC** | MARITIME COMMUNICATIONS | **TERM 1**  **REVISION** |  | **TERM 2 CONTENT** | x |

Answer 1

* 1. Art and science (process) of manoeuvrings safely and efficiently (economically) 

from one point to another (3)

* 1. Any three (3) duties of a Navigator onboard ship.  (3)
  2. Global Positioning  System  (3)
  3. Latitude Longitude Time  (3)
  4. Transducer sends out a sound pulse/energy into the water; 

Transmitted sound signal bounce off the sea bottom/bed (3)

Using the time lapse between Transmission and Reception of signal,

the echo sounder determines the distance (depth of water) below ships keel

* 1. Distance (Depth of Water) = 1500m/s X 5s = 3750m (3)

2

* 1. Distance (Depth of Water) = Speed of Sound in Water (m/s) x Time (s)

2

1500m/s x 10s = 7500  m (metres) (4)

2

* 1. (Any 3) Determining depth of water Locating underwater objects and navigational hazards 

Locating schools of fish (fish-finder)  Determining bottom contours and composition (e.g. mud, rock)  (3)

* 1. Radio Detection And Ranging (3)
  2. The radar set Transmitter transmits a radio signal (radio waves) into the air, 

Transmitted radar signals bounce off objects in their path, and the radar system detects/receives the echoes

of signals that return.  Using the time lapse between Transmission and Reception of signal,

the radar determines the range of the detected object.  (3)

* 1. Detection  and Ranging  objects/contacts on sea surface (2)
  2. Speed  and Distance  (2)
  3. Gyro compass  and Magnetic compass  (2)

1.13 a. Gyro compass  (1)

b. Magnetic compass (1)

c. Magnetic compass (1)

Answer 2

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | a | b | c | d | e |  |
| 2.1 | **T** | 343 | 002 | ***183*** | 191 | 004 | (1) |
| 2.2 | **V** | ***021E*** | 005E | 017W | 003E | ***012******E*** | (4) |
| 2.3 | **M** | 322 | ***357*** | 200 | ***088*** | 352 | (2) |
| 2.4 | **D** | 003E | 007W | ***002W*** | ***005E*** | ***002W*** | (6) |
| 2.5 | **C** | ***319*** | ***004*** | 202 | 083 | 354 | (2) |

Answer 3

3.1 North  South  (2)

* 1. East West  (2)



(10)

Answer 4

(a). 023°  (b). East North East (c). 090 ° (d)..South East  (e). 180°

(f). South West  (g). West South West  (h). West (i).. 315° (j). North  (10)