

**CHECK YOUR PROGRESS  
ENGINEERING 3**

**NAME:**  
(answers)

**VIEW**

TDMMR3007B  
TDMMR3107B  
TDMMR3207B

- 1 Operate and carry out basic service checks on small vessel marine propulsion systems
- 2 Operate and carry out basic servicing on auxiliary systems
- 3 Operate and carry out basic routine servicing of marine extra low/low voltage electrical sys

**TDMMR3207B ELECTRICAL SYSTEMS**

**Question 1 (1 Mark)** Validates to TDMMR3207B element 1a

Electricity can be generated electro-chemically and electro-magnetically.

TRUE

FALSE

**Question 2 (1 Mark)** Validates to TDMMR3207B element 1a

The electrolyte in a lead-acid battery is?

- a. hydrochloric acid
- b. sulphuric acid
- c. diluted nitric acid
- d. diluted sulphuric acid

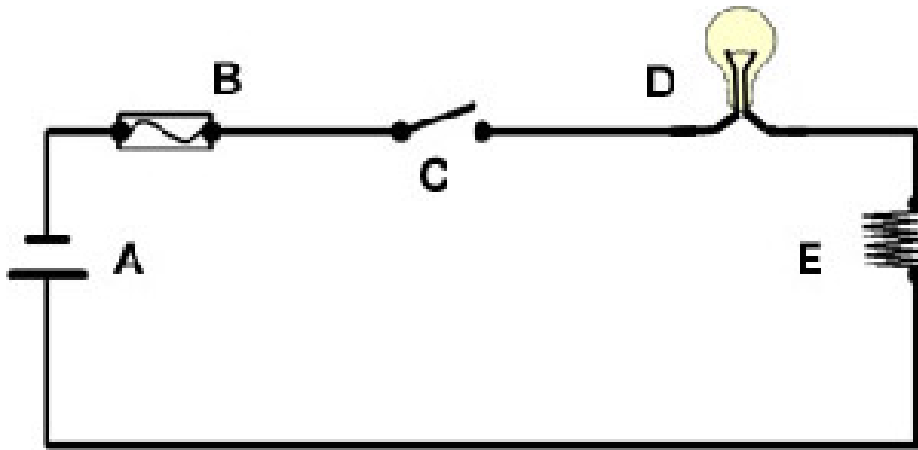
**Question 3 (1 Mark)** Validates to TDMMR3207B element 1a

Match the term with the description:

- |               |                                      |
|---------------|--------------------------------------|
| 1. Conductor  | a. The opposition to current flow    |
| 2. Insulator  | b. Allows current to move through it |
| 3. Fuse       | c. Will not allow current flow       |
| 4. Resistance | d. Will melt with current overload   |

**Question 4 (1 Mark)** Validates to TDMMR3207B element 1a

Name the components of the simple circuit labelled below:



A= \_\_\_\_\_

B= \_\_\_\_\_

C= \_\_\_\_\_

D= \_\_\_\_\_

E= \_\_\_\_\_

**Question 5 (1 Mark)** Validates to TDMMR3207B element 1a

Match the term with the description:

- |         |  |
|---------|--|
| 1. Volt | a. A unit of electrical resistance           |
| 2. Amp  | b. A unit of electrical potential difference |
| 3. Watt | c. A unit of electrical current flow         |
| 4. Ohm  | d. A unit of electrical power                |

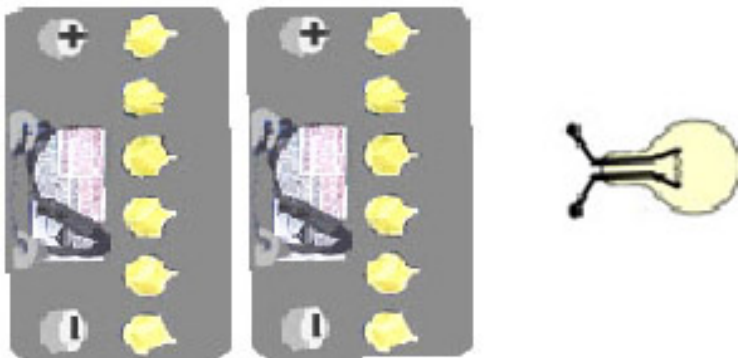
**Question 6 (1 Mark)** Validates to TDMMR3207B element 1a

The lead acid battery shown below has six two volt cells internally connected in series. The voltage available from this charged battery is \_\_\_\_\_ volts.



**Question 7 (1 Mark)** Validates to TDMMR3207B element 1a

Draw the electrical leads, correctly connected, that will be required to fully light the test 12 volt light globe from two 12 volt batteries shown below.



**Question 8 (1 Mark)** Validates to TDMMR3207B element 1a

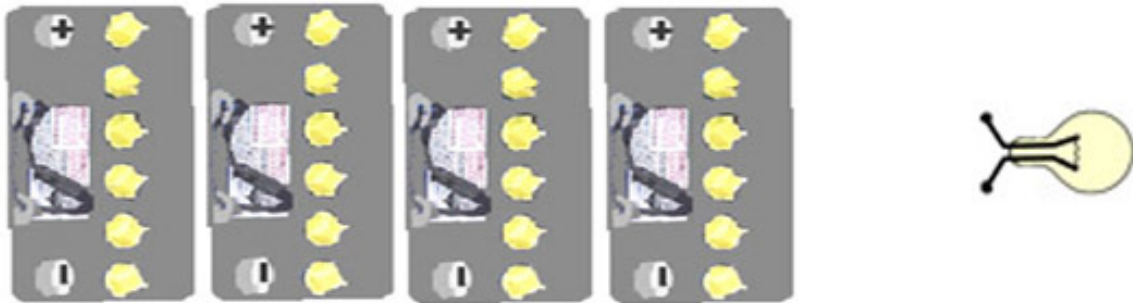
This circuit in Question 7 is said to be a series circuit.

TRUE

FALSE

**Question 9 (1 Mark)** Validates to TDMMR3207B element 1a

Draw the electrical leads, correctly connected, that will be required to fully light the test 24 volt light globe from two 12 volt batteries shown below.



**Question 10 (1 Mark)** Validates to TDMMR3207B element 1a

These circuits are said to be a series/parallel circuits.

TRUE

FALSE

**Question 11 (1 Mark)** Validates to TDMMR3207B element 1b

Batteries should be installed in a vessel:

- high up above the water line in case of swamping
- low down to increase the stability of the vessel
- where they can be vented to the atmosphere
- at a height where they are easily checked avoiding back injuries

**Question 12 (1 Mark)** Validates to TDMMR3207B element 1b

When a fuse blows you should replace it with:

- a higher capacity fuse
- a lower capacity fuse
- the same capacity fuse
- a piece of rolled up silver foil

**Question 13 (1 Mark)** Validates to TDMMR3207B element 1b

If the battery leads of a small vessel's 12 volt electrical circuitry were reversed

- a. the fuses would blow
- b. it does not matter
- c. electrical motors will operate normally but the radio won't
- d. electrical system damage and personal injury may result

**Question 14 (1 Mark)** Validates to TDMMR3207B element 1c

The instrument shown below is called a\_\_\_\_\_.

It is used for\_\_\_\_\_.



**Question 15 (1 Mark)** Validates to TDMMR3207B element 1c

The specific gravity of a battery cell that is fully discharged is described as:

- a. 1100
- b. 1250
- c. 1150
- d. 1200

**Question 16 (1 Mark)** Validates to TDMMR3207B element 1d

The 240 volt switching unit shown below indicates that there is current in the shore power line. Describe the procedures to switch over to the vessel's generator set:



**STEP 1** \_\_\_\_\_

**STEP 2** \_\_\_\_\_

**STEP 3** \_\_\_\_\_

**STEP 4** \_\_\_\_\_

**Question 17 (1 Mark)** Validates to TDMMR3207B element 1d

When connecting shore power at a jetty in the rain, great care must be taken to fully insert the plug before switching on the electrical socket because:

- a. you could slip
- b. the plug may be swollen and not fit properly
- c. the damp may act as an insulator
- d. you could be electrocuted

**Question 18 (1 Mark)** Validates to TDMMR3207B element 2a

If the ammeter reads negative and the voltmeter is dropping a likely cause is a:

- a. slipping alternator drive belt
- b. over revving alternator
- c. open circuit
- d. flat battery

**Question 19 (1 Mark)** Validates to TDMMR3207B element 2a

Moving machinery pulleys and drives must be fitted with a \_\_\_\_\_.

**Question 20 (1 Mark)** Validates to TDMMR3207B element 2b

If an alternator diode fails the voltage indicator will read zero.

TRUE

FALSE

**Question 21 (1 Mark)** Validates to TDMMR3207B element 3a

The gas given off by a battery when it is being charged is?

- a. explosive
- b. ozone
- c. chlorine
- d. toxic

**Question 22 (1 Mark)** Validates to TDMMR3207B element 3b

Salt water used to top the battery electrolyte if nothing else is available.

TRUE

FALSE

**Question 23 (4 Marks)** Validates to TDMMR3207B element 3c

With reference to confined spaces, match the description on the right, with the correct item on the left:

- |                         |   |
|-------------------------|---|
| 1. Isolation            | a. Physical barriers erected to prevent entry |
| 2. Lockout              | b. Issued only by a competent person          |
| 3. Gas free certificate | c. Removal of all services into a space       |
| 4. Permit to work       | d. Required conditions of entry               |

**Question 24 (1 Mark)** Validates to TDMMR3207B element 3d

The switches on the 240 volt panel shown below are called\_\_\_\_\_.



**Question 25 (1 Mark)** Validates to TDMMR3207B element 3d

Faulty electrical equipment must be\_\_\_\_\_and\_\_\_\_\_:



**Question 26 (1 Mark)** Validates to TDMMR3207B element 3d

Of the three battery switches at the bottom of this 24 volt switch board the middle one is only used to \_\_\_\_\_.



**Question 27 (4 Marks)** Validates to TDMMR3207B element 3e

A fire control plan is summarised by the phrase to ***FIRE***- Find the problem, Inspect/isolate it, Report and the Extinguish.

Write a brief plan for the damage that I have found for you.

**F** An electrical fire has broken out in the 240 volt switchboard.

**I** \_\_\_\_\_  
\_\_\_\_\_

**R** \_\_\_\_\_  
\_\_\_\_\_

**E** \_\_\_\_\_  
\_\_\_\_\_