

**CHECK YOUR PROGRESS
SEAWORTHINESS**

ANSWERS

Structure & Seaworthiness

Question 1 (1 Mark) Validates to TDMMB4507A element 1a

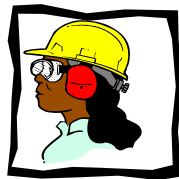
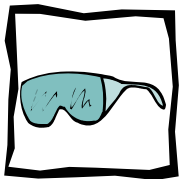
Routine inspections and maintenance enable timely **repairs** to be made before a major failure occurs.

Question 2 (1 Mark) Validates to TDMMB4507A element 1a

In deciding to repair or replace a component it must be considered if it is **worth** repairing.

Question 3 (5 Marks) Validates to TDMMB4507A element 1a

Name the routine maintenance jobs where OH&S regulations would require the use of each item of personal protective equipment shown below.



Job 1	Job 2	Job 3	Job 4	Job 5

Question 4 (4 Marks) Validates to TDMMB4507A element 1a

The extract from a small commercial vessel's maintenance checklist below lists a single item for each of the periodic inspections. Add another item relevant to your vessel that should be checked.

Implementation date 01/07/08		Review date 01/07/09
ENGINEERING MAINTENANCE CHECKLIST		
Weekly		
Yes	Raw water screens.	
Yes	?	
Monthly		
Yes	Open sea-water suction and discharge valves.	
Yes	?	
Three monthly		
Yes	Check helm pump hydraulic reservoir level.	
Yes	?	
Six monthly		
Yes	Servicing of fire extinguishers.	
Yes	?	

Question 5 (1 Mark) Validates to TDMMB4507A element 1b

The survey of a vessel is a:

- a. running test
- b. detailed check
- c. visual inspection
- d. thorough examination**

Question 6 (1 Mark) Validates to TDMMB4507A element 1b

The annual survey schedule of vessel's less than 35 metres does not include:

- a. safety equipment
- b. inspection of all pipe arrangements.
- c. chain locker internally.**
- d. general examination of machinery installation and electrical installation.

Question 7 (1 Mark) Validates to TDMMB4507A element 1b

Before slipping a vessel a list of all **repair items** should be drawn up.

Question 8 (1 Mark) Validates to TDMMB4507A element 1b

When placing the lifting straps of a travel lift under a vessel that is to be removed from the water, they must be:

- a. positioned at the vessel's extreme ends
- b. positioned under the vessel's shoulders
- c. positioned under the vessel's bulkheads**
- d. positioned under the vessel's mid section

Question 9 (1 Mark) Validates to TDMMB4507A element 1b

Careening means that a vessel is:

- a. sailing along very fast
- b. beached and heeled over for repairs or bottom scrubbing**
- c. gone aground through lack of care
- d. entered and raided by thieves

Question 10 (1 Mark) Validates to TDMMB4507A element 1b

When a vessel is slipped its weight is supported at a few points, rather than over the entire underwater section of the hull when it is **afloat**.

Question 11 (1 Mark) Validates to TDMMB4507A element 1b

When antifouling a slipped vessel the transducers and anodes should be **covered**.

Question 12 (1 Mark) Validates to TDMMB4507A element 1c

An out of water survey is required on a commercial timber vessel:

- a. every six months
- b. annually**
- c. at two year intervals
- d. at four year intervals

Question 13 (1 Mark) Validates to TDMMB4507A element 1c

At survey of a commercial vessel, an inspection of all pipe arrangements is required:

- a. every six months
- b. at four year intervals
- c. at every annual survey**
- d. at eight year intervals

Question 14 (1 Mark) Validates to TDMMB4507A element 1c

At survey of fuel tanks internally are required:

- a. every six months
- b. at four year intervals
- c. at eight year intervals**
- d. at two year intervals

Question 15 (1 Mark) Validates to TDMMB4507A element 1c

An out of water survey is required on a commercial steel vessel:

- a. every six months
- b. annually
- c. at two year intervals**
- d. at four year intervals

Question 16 (1 Mark) Validates to TDMMB4507A element 1c

Safety equipment should be checked:

- a. every six months
- b. annually
- c. daily
- d. at every emergency drill**

Question 17 (1 Mark) Validates to TDMMB4507A element 1d

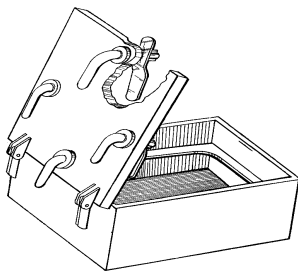
Sliding wheelhouse doors are:

- a. waterproof
- b. airtight
- c. weathertight**
- d. watertight

Question 18 (1 Mark) Validates to TDMMB4507A element 1d

The hatch drawn below is designed to be: *(drawing courtesy of ANTA)*

- a. waterproof
- b. airtight
- c. weathertight
- d. watertight**



Question 19 (1 Mark) Validates to TDMMB4507A element 1d

Side or bow loading doors in the hull must have an **alarm** fitted.

Question 20 (1 Mark) Validates to TDMMB4507A element 1d

A vessel is required to be watertight:

- a. **below the freeboard deck**
- b. above the main deck
- c. above the freeboard deck
- d. below the upper deck

Question 21 (1 Mark) Validates to TDMMB4507A element 1e

Under tropical sunshine, without periodic hosing, the seams of deck planking will:

- a. become darker
- b. **open up**
- c. close up
- d. harden

Question 22 (1 Mark) Validates to TDMMB4507A element 1e

Application of surface coatings must comply with the manufacture's specification of:

- a. hue and atmosphere conditions
- b. **temperature and humidity**
- c. pressure and atmospheric temperature
- d. humidity and atmospheric pressure

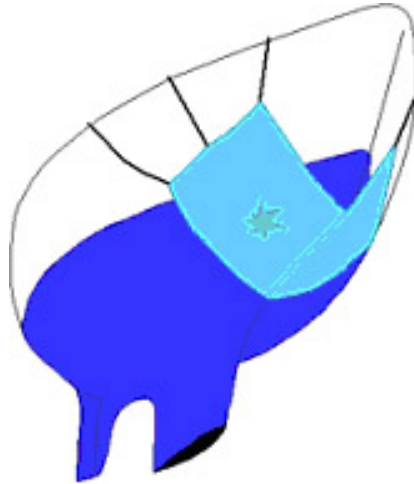
Question 23 (1 Mark) Validates to TDMMB4507A element 1f

An emergency tiller arrangement is required for vessels with only one **motor**.

Question 24 (1 Mark) Validates to TDMMB4507A element 1f

A canvas as drawn below is deployed in order to:

- a. reinforce the hull when collision seems imminent
- b. mask off the anodes before antifouling the hull
- c. reduce the drift of a vessel in a storm
- d. reduce the inflooding of water after the hull has been holed**



Question 25 (1 Mark) Validates to TDMMB4507A element 1f

If slack maintenance allows sea water to enter through watertight doors, the vessel's:

- a. reserve buoyancy would be reduced**
- b. reserve buoyancy would be increased
- c. reserve permeability would be increased
- d. reserve permeability would be reduced

Question 26 (1 Mark) Validates to TDMMB4507A element 1g

Lifting gear must be clearly marked with its:

- a. breaking strain
- b. safe working load**
- c. safe operating temperature
- d. strain brake

Question 27 (1 Mark) Validates to TDMMB4507A element 1g

Running cargo gear should be checked:

- a. every six months
- b. every time it is used
- c. every three months
- d. all of the above**

Question 28 (1 Mark) Validates to TDMMB4507A element 1g

Winch wires are coated with grease to protect them from **corrosion** .

Question 29 (1 Mark) Validates to TDMMB4507A element 1g

When disengaging the gypsy the **brake** first needs to be applied.

Question 30 (1 Mark) Validates to TDMMB4507A element 1g

Deck machinery with faults in the brake, clutch or stop controls must be:

- a. operated carefully
- b. used only for small loads
- c. tagged and isolated**
- d. only used when needed

Question 31 (1 Mark) Validates to TDMMB4507A element 1g

Six monthly maintenance on deck machinery requires:

- a. examining for wear in clutch, brakes and wire**
- b. re-painting
- c. checking the safe working load
- d. stripping down

Question 32 (1 Mark) Validates to TDMMB4507A element 1g

The requirements of Marine Orders Part 32 (Cargo and Cargo Handling – Equipment Safety Measures) apply to all commercial vessels:

- a. greater than 35 metres in length
- b. on interstate or international voyages
- c. greater than 80 metres in length
- d. using cargo handling gear**

Question 33 (1 Mark) Validates to TDMMB4507A element 1g

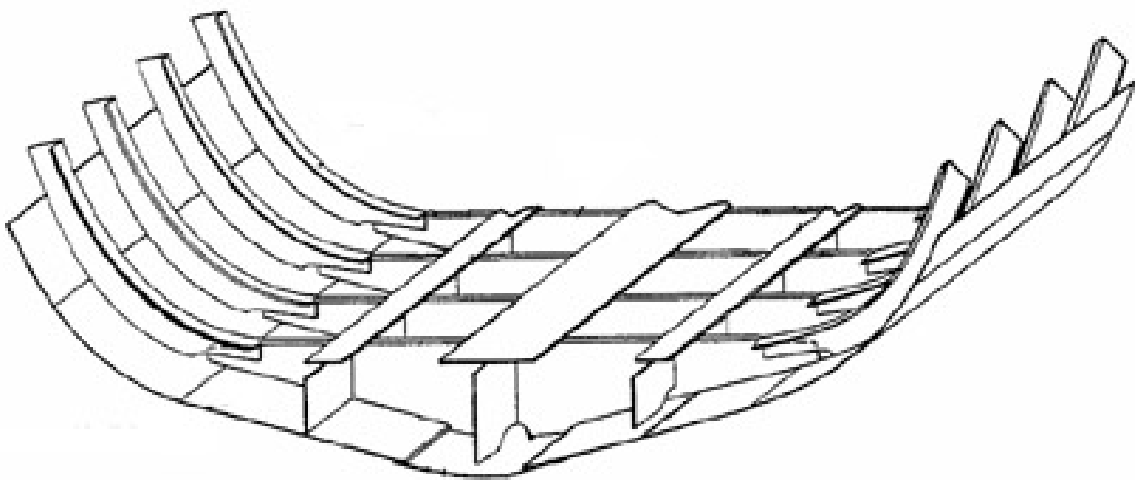
Portable 240 volt power tools should only be used with:

- a. overload protection**
- b. fused protection
- c. waterproof leads
- d. the vessels battery banks

Question 34 (4 Marks) Validates to TDMMB4507A element 2a

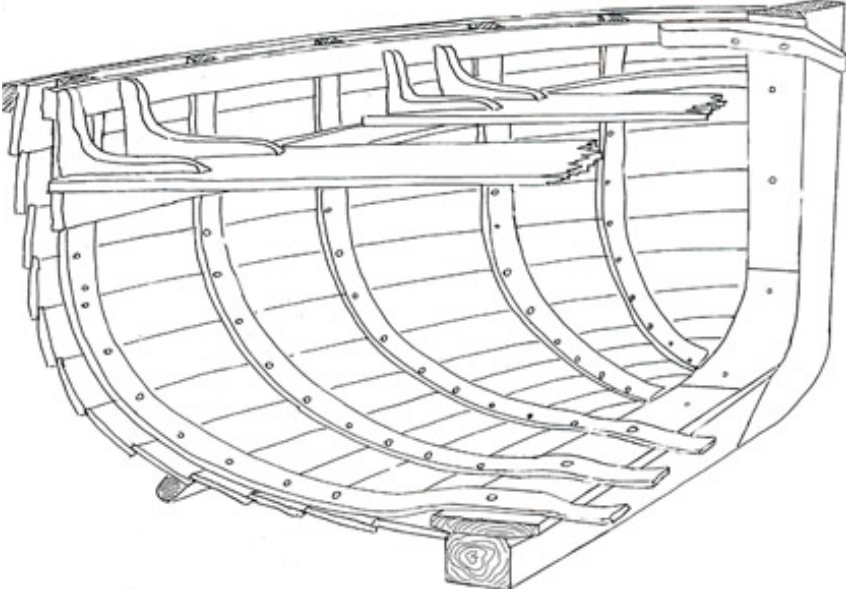
On the drawing below mark the plate keel, shell plate, side frames and floor:

(drawing courtesy of ANTA)



Question 35 (4 Marks) Validates to TDMMB4507A element 2a

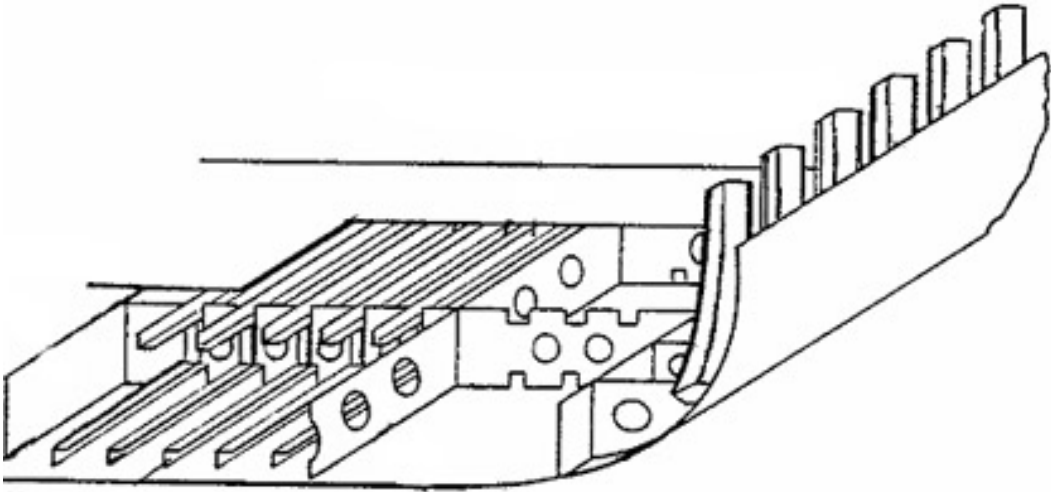
On the drawing below mark the hog, apron, ribs and breast hook:



Question 36 (4 Marks) Validates to TDMMB4507A element 2a

On the drawing below mark the tank top, longitudinals, margin and lightening holes:

(drawing courtesy of ANTA)



Question 37 (4 Marks) Validates to TDMMB4507A element 2a

On the drawing below mark the stern post, after deadwood, stem and rabet:



Question 38 (4 Marks) Validates to TDMMB4507A element 2b

The picture below shows two permanently longitudinally damaged vessels. What is the name given to each condition?



hogging



sagging

What may have caused this to have happened?

Nail sickness or poor support at slippings

Question 39 (1 Mark) Validates to TDMMB4507A element 2b

Hatch coamings are designed to:

- a. stress structural deck openings
- b. strengthen structural deck opening**
- c. weaken structural deck openings
- d. drain water off a vessel's deck

Question 40 (1 Mark) Validates to TDMMB4507A element 2b

Electrochemical corrosion is a result of:

- a. residual electrical current earthing
- b. spilt battery acid
- c. electrolysis generated by dissimilar metals in an electrolyte**
- d. all of the above

Question 41 (1 Mark) Validates to TDMMB4507A element 2c

The top of the steel bar shown experiences the stress of **tension**.

The bottom of the steel bar shown experiences the stress of **compression**.



Question 42 (1 Mark) Validates to TDMMB4507A element 2c

Steel is heavy and **rusts** quickly.

Question 43 (1 Mark) Validates to TDMMB4507A element 2c

Copper based antifouling are most suited to aluminium hulls.

TRUE

FALSE

Question 44 (1 Mark) Validates to TDMMB4507A element 2c

Brass screws are unsuitable for structural fastenings at sea as they become hard and brittle due to de zincification.

TRUE

FALSE

Question 45 (1 Mark) Validates to TDMMB4507A element 2c

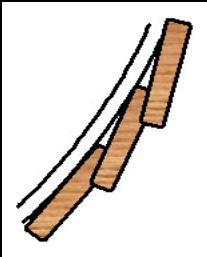
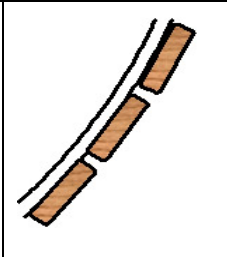
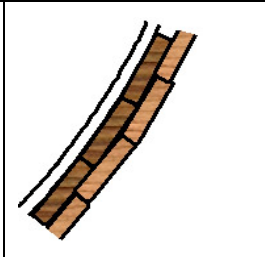
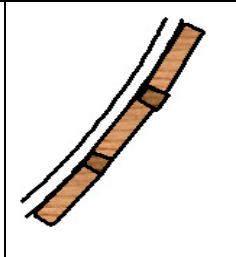

On the galvanic scale, lead is closer to the anodic end and bronze is closer to the cathodic end.

TRUE

FALSE

Question 46 (5 Marks) Validates to TDMMB4507A element 2c

Name the five common planking systems shown in the drawings below

				
System 1	System 2	System 3	System 4	System 5

Question 47 (1 Mark) Validates to TDMMB4507A element 3a

Crevice corrosion usually occurs on:

- a. **the threads of nuts and bolts**
- b. propeller blades
- c. exposed areas of propeller shafts
- d. elbows in skin fitting.

Question 48 (1 Mark) Validates to TDMMB4507A element 3a

If a vessel is taking on more water than is usual, the source of the leak should be found and marked before the next visit to the **slip**.

Question 49 (1 Mark) Validates to TDMMB4507A element 3a

The deterioration in the GRP hull shown below is called **osmosis**.



Question 50 (1 Mark) Validates to TDMMB4507A element 3b

Corrosion can be minimised by applying surface coatings or fitting sacrificial **anodes**.

Question 51 (1 Mark) Validates to TDMMB4507A element 3b

Corrosion around propeller shafts is best minimised by use of:

- a. surface coatings
- b. strip anodes
- c. shaft anodes**
- d. lanoline grease

Question 52 (1 Mark) Validates to TDMMB4507A element 3c

Pre-departure checks should be recorded in the **engine room** log book.

Question 53 (1 Mark) Validates to TDMMB4507A element 3c

Unserviceable equipment should be:

- a. stowed
- b. disposed of
- c. used
- d. tagged**

Question 54 (1 Mark) Validates to TDMMB4507A element 3c

In the event of a serious spill or accident that occurs during repair work then an **incident report** should be notified to the Maritime Authority.

Question 55 (1 Mark) Validates to TDMMB4507A element 3d

Faults and repairs should be recorded in the **maintenance** log book.

Question 56 (1 Mark) Validates to TDMMB4507A element 3d

Before using AC electrical equipment after repairs it must have been approved as **serviceable** by a competent contractor.

Checked by	Approved by
------------	-------------