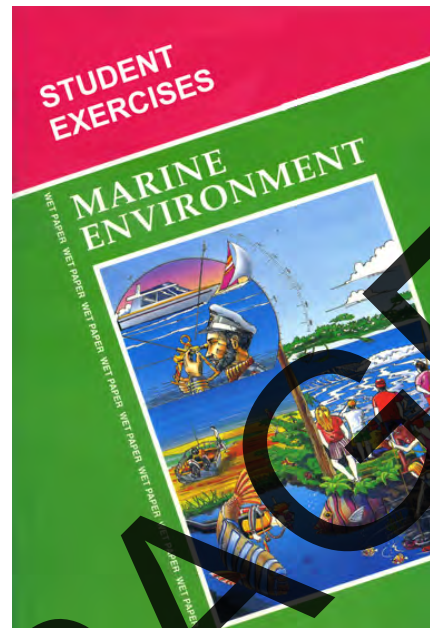


Suggested answers to Marine Environment manual

by

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*Heatley State High School, Maryborough State High
School and Wet Paper*



Companion to the textbook

Marine Studies for Senior Students



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SAMPLE PAGE

Section 1 Non – living aspects of the sea

Exercise 1 Sea water salts

1. The water starts to evaporate from the bottom of the flask and the temperatures rises. You can see steam on top of the water.
2. Pure water comes off the top and salt water is left behind.
3. When you get to the end of the process the salt starts to spit up and crackle.
4. Up to students.
5. Solute –□the material that dissolved in the water e.g. the salt
Solvent –□the liquid the solute dissolves in e.g. the water
Solution –□the solute plus the solvent

Exercise 2 Salinity

1. Students should see that the potassium di-chromate turns red as end point approaches.
2. The graph should be like the one shown in Figure 2.3

Notes:

- a. You must be consistent in the use of the same size eye-dropper.
- b. A good quality salinity meter can be used to check students results and help them draw the graph properly.

Exercise 3 Sea water density

Part A

The pencil in salt water should float higher.

Part B

1. Students plot graph to get results. The graph should change with salinity.
2. Students own results.
3. Salt water is more dense.
4. Fresh water would be found on the top.
5. A line of water where salinity changes quickly.

Exercise 4 Waves

Part A

1. The velocity
2. The wavelength
3. The frequency
4. a. frequency
b. wavelength
c. velocity

Part B

5. They slow down.
6. The sand in the bottom of the tray.
7. Refraction is the bending of waves as they pass into shallow water
8. Orbit fields are energy fields under the wave.
9. A perfect break is when the shoulder of the wave breaks evenly as the wave passes into shallow water in the form of a tube or barrel. This allows the surfer to ride the wave endlessly in the barrel.
10. A groyne: Boulders placed by humans that jut out to sea to capture sand and form a beach. Found to be ineffective process as only causes erosion on other side of rock wall.
11. Students copy Figure 4.5

Exercise 5 Longshore drift

1. The longshore drift
2. Yes
3. Students locate Page 331 and draw Figure 40.
4. Swim with the rip to the next sandbank and catch a wave in.
5. Locate Page 332 and draw Figure 43.

Exercise 6 Longshore drift field work

1. The longshore drift should flow in the direction that the waves are breaking (that is if there are waves and if the waves are approaching the beach at an angle – which is how a longshore current begins).
2. Students own calculation. $Speed = distance \div time$.
3. Students own observation. Usually water moves the quickest in the middle of the wave zone.
4. Students use map to work out distance and calculate time from above formula.
5. Dye