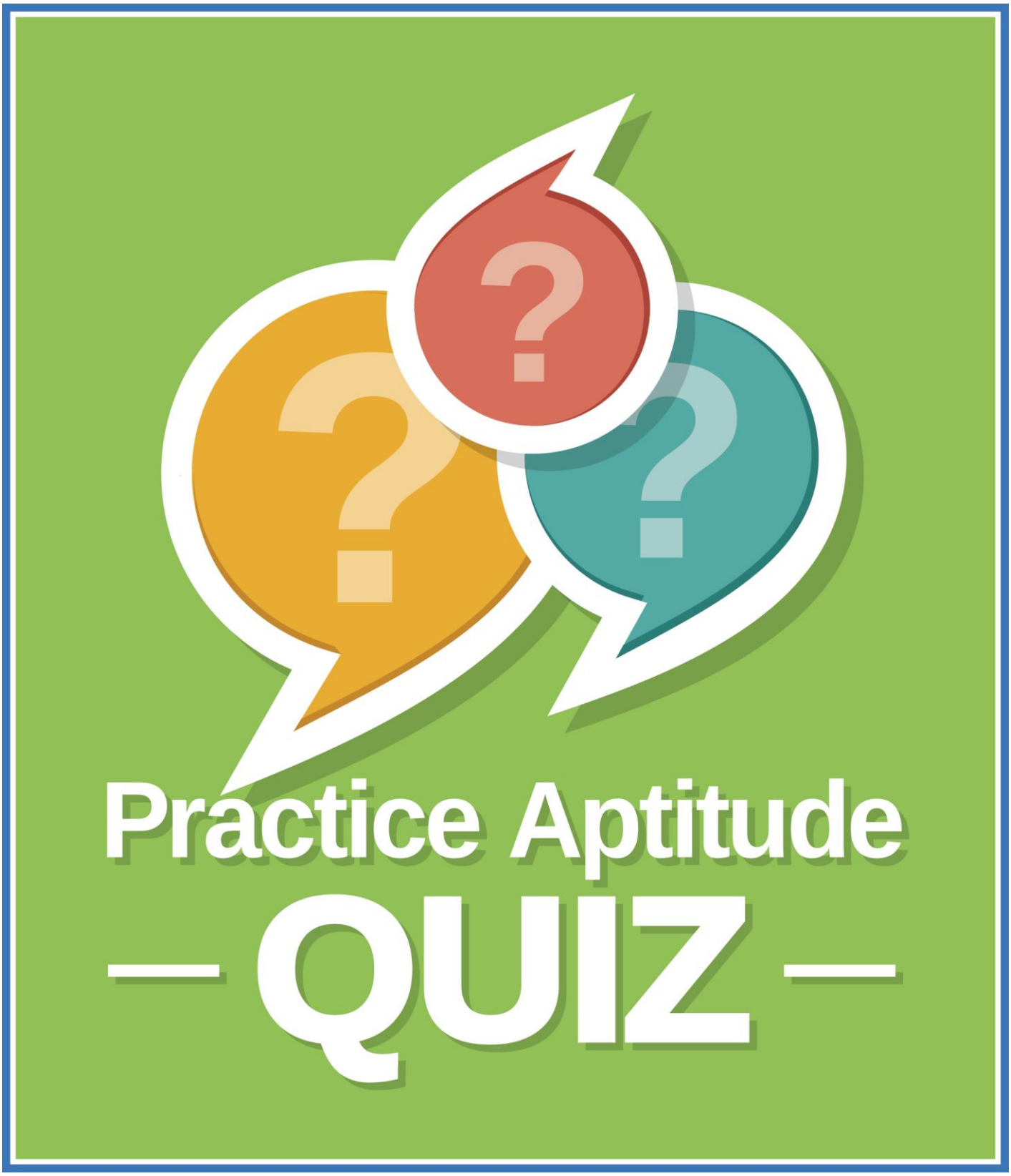

Water Industry

Part 1: About this Water Industry Quiz

This Practice Aptitude Quiz shows some of the key learning standards needed by someone starting an Australian Apprenticeships entry-level qualification in the Water sector. The quiz was developed with the help of industry, TAFE and the secondary school sector as a careers resource.

This Practice Aptitude Quiz is not a formal assessment tool or a pre-requisite for any job application.

About this quiz

- This quiz focuses on literacy and numeracy questions, using examples related to this specific industry.
- The quiz should take approximately 45 minutes to complete.
- You can use calculators to assist you during the quiz.
- Answers are located at the end of the quiz.
- Prices for items and rates of pay are used for maths purposes only. They may not reflect correct values.

Who should use it?

This quiz can be used by students and job hunters who want to understand the literacy and numeracy requirements of an Australian Apprenticeship. It can also be used as a practice before sitting a formal aptitude test.

The quiz can also be used by organisations and career practitioners working with students and job hunters, to:

- Assist in discussions about the literacy and numeracy requirements of Australian Apprenticeship training.
- Provide guidance on the level of study involved in starting an Australian Apprenticeship entry level qualification in this industry.
- Demonstrate and explain how literacy or numeracy relate to this industry.

Employers and industry associations may also use this quiz to educate potential Australian Apprentices about the literacy and numeracy requirements in their industry.

After the quiz

If you are worried about your literacy or numeracy skills you should talk to a career adviser or teacher if you are still at school or in training. You can also talk to the Reading Writing Hotline on 1300 655 506 or at readingwritinghotline.edu.au.

For more information about the industry you are interested in, take a look at the industry pages at aapathways.com.au/industries. You can find information about pre-apprenticeships, industry specific job-hunting tips, and peak industry bodies that may be able to help you with further information about that industry.

Information about the Steps to an Australian Apprenticeship can be found at aapathways.com.au/steps. These will help you with the steps to finding an Australian Apprenticeship, including preparation and job hunting.

Useful contacts

Here are some organisations that may be able to support you with your literacy and numeracy skills, or your Australian Apprenticeship journey:

- Reading Writing Hotline: 1300 655 506 or readingwritinghotline.edu.au
- Career services: aapathways.com.au/career-services
- Australian Apprenticeship Support Network providers: aapathways.com.au/sps
- Group Training Organisations: aapathways.com.au/sps

Intended Use Summary

This quiz is:

- A practice test of literacy and numeracy skills.
- A general guide to study requirements for entry level qualifications.
- Intended to test at a Year 11 level.
- Intended to guide further careers investigation with the help of a careers expert.
- Designed to be completed with a calculator.

This quiz is **not**:

- A pre-requisite for any job application.
- A formal assessment of literacy and numeracy.
- A test of general knowledge.
- A test of complex problem solving or reasoning.
- A guide for prices of items or rates of pay. These figures are fictional examples.

Part 2: The Quiz

Section 1: Language and Literacy

1. There are five spelling errors in the paragraph below:

Maintanance skedules for water meter repairs are very importent. Regular attention is needed for the replacement of worne parts and for correct reading of the dails.

Write the correct spelling of the misspelt words below:

1.	
2.	
3.	
4.	
5.	

2. Which of the following words completes these sentences? Select the correct response.

a. Joni was positive she was outside when she _____ the sensor alarm go off.

◯ has heard ◯ heard ◯ will hear ◯ hears

b. We were concerned when we saw _____ teams were involved in the evacuation.

◯ when ◯ who's ◯ what ◯ which

c. Brad discovered that the technical plans could be drawn_____ on a computer.

- more easy
- really easy
- more easily
- easy

d. The hydrographic team will be leaving their office on Saturday, spending two days working in Alice Springs and then_____ due in Adelaide on Wednesday morning.

- their
- they
- there
- they're

3. Which of the following sentences are correct? Select the correct answer.

a.

- i. She said, "water is often polluted downstream."
- ii. She said, "Water is often polluted downstream."

b.

- i. Mark Paxon, the vice president of crystal water improved profits significantly.
- ii. Mark Paxon, the Vice President of Crystal Water, improved profits significantly.

c.

- i. I live in the north–eastern part of the state where the rainfall is higher.
- ii. I live in the North eastern part of the state where the rainfall is higher.

d.

- i. My entire team, of Bill, Angie, Tom, and Rashi, worked overtime yesterday.
- ii. My entire team of Bill, Angie, Tom, and Rashi, worked overtime yesterday.
- iii. My entire team of Bill Angie Tom and Rashi, worked overtime yesterday.
- iv. My entire team of Bill, Angie, Tom and Rashi worked overtime yesterday.

e.

- i. If you lodge your interest now you are likley to be involved in the tendor process.
- ii. If you lodjge your intarest now you are likely to be involved in the tender process.
- iii. If you lodge your interest now you are likely to be involved in the tender process.
- iv. If you lodge your intrest now you are likely to be envolved in the tendar process.

f.

- i. Your superviser wanted to know when you will be here.
- ii. Your supervisor wanted to know when you will be here.

g.

- i. The recent climatic conditions have contributed to the stream's algae problems.
- ii. The recent climatic condition's have contributed to the streams' algae problems.
- iii. The recent climatic conditions' have contributed to the streams algae problems.

h.

- i. The supervisors schedule confirmed he's attending a meeting at 2pm.
- ii. The supervisor's schedule confirmed his attending a meeting at 2pm.
- iii. The supervisor's schedule confirmed he is attending a meeting at 2pm.

4. **Correctly punctuate the following paragraphs by rewriting the paragraph in the space below them:**

a. The majority of protozoa in freshwater are natural aquatic organisms and are of no significance to health they generally feed on other micro-organisms such as bacteria cyanobacteria or algae the greatest diversity of protozoa is found in open surface waters including water supply sources but some species can colonise piped water supplies

b. A hazard has the potential to cause you or others injury or ill-health damage to property or harm to the environment it is everyones job to look out for hazards

5. Read the following article about SunWater's fishway project and answer the questions that follow:

In June 2004, SunWater began construction of the Clare Weir Fishway on the Burdekin River. The new fishway replaced the existing fishladder at the weir, completed in 1991, which was based on an American design and was not ideally suited to Australian native fish.

SunWater worked closely with DPI Fisheries to investigate the effectiveness of the existing fishladder in allowing fish species such as barramundi and long-finned eels to continue their upstream migration at the weir and found that a new fishway was needed to ensure fish stocks survived and bred on either side of the Clare Weir. Some of this information was gathered from a Barramundi Fish Tagging Program completed in the rainy season of 2002 by the Burdekin Fish Restocking Association.

A feasibility study commenced in August 2003 to investigate viable alternatives for modifying the fishway and concluded that a fishlock system would be the most successful option for fish migration and breeding in this area.

This type of fishway has already proven to be very effective at the Neville Hewitt Weir on the Dawson River, Eden Bann Weir on the Fitzroy River, Ned Churchward Weir on the Burnett River and Dumbleton Weir on the Pioneer River. The fishlock works by attracting fish into a chamber by using an artificial flow. A door to this chamber closes periodically and the chamber is then raised hydraulically to the higher water level above the wall so that the fish can be released.

This passage was taken from https://www.sunwater.com.au/

a. Who did SunWater work closely with on this project?

- ◯ Neville Hewitt
- ◯ DPI Fisheries
- ◯ Ned Churchward
- ◯ Burdekin Fish Restocking

b. In what year did the construction of the new replacement fishway begin?

- ◯ 1991
- ◯ 2003
- ◯ 2004
- ◯ 2009

c. What were the main reasons for SunWater's decision to construct a new fishway?

- ◯ The current fishladder was not effective
- ◯ They wanted to allow barramundi and long-finned eels to continue their migration
- ◯ To ensure fish stocks survived and bred on either side of the Clare Weir
- ◯ All of the above

d. Using your own words, briefly describe why the new fishway could be considered more effective:

6. Match the controls with the hazards. Write your answers in the table below: (Hint: there may be more than one Control for a hazard)

Hat	Protective boots
Sunscreen	Manual handling guidelines
Long sleeved shirt	Personal flotation device
Work in groups or pairs	Protective face mask and gloves

Hazards	Risk	Risk Minimisation Controls
a. Chemical Exposure	Injury	
b. Sun/Weather Exposure	Sunburn	
c. Manual handling	Injury	
d. Falling into water	Drowning	
e. Dropped object	Foot Injury	

Section 2: Numeracy

Part A: complete the following without a calculator

1. Calculate the answers to the following:

a. 73.03 + 58.23 + 23.99 + 79.38 _____

b. 4 + 7 – 2 + 3 _____

c. 3 + 5 x 2 – 7 _____

2. Select the smallest fraction from the choices below:

- ◯ 1/4
- ◯ 27/32
- ◯ 18/64
- ◯ 7/8

3. Select the correct answer for the following equation: $3^3 \times 3^4$

- ◯ 3^7
- ◯ 9^{12}
- ◯ 9^7
- ◯ 3^{12}

4. Manipulate the following equations so that they Y is the subject:

a. D – J = U – Y

b. H + 2(R – 3) = K x Y

c. Y (E + 7) = T – E

5. An operator is instructed to reduce the flow rate in the plant by 10%. If the current flow rate is 7540 kL per day, calculate what the new flow rate should be.

Part B: use a calculator for this section

6. A circular water tank has a diameter of 7.56 m and is 4 m high. Calculate the following measurements:
Include units in your answers. Use π as 3.14. Round to two decimal places.

a. Circumference of the tank in metres

b. Volume of the tank, if filled with water to the brim in cubic metres.

c. There are 1000 litres to 1 cubic metre. How many litres does this tank hold when half-full?

7. Express the following as a decimal:

a. 2/10

b. 4/5

c. 2/3 x 4/7

8. Apply the equation below to calculate the fluoride concentration (F mg/L) in the final treated water:

$$F_{mg/L}\ (\text{treated water}) = \frac{(MxKxPx100)}{+Cnw}$$

A dry feeder uses 2 kg of NaF (M = 2000g) in one day to treat 1 ML (Vt =1000000L) of water. The purity (K) of the NaF is 98% (K = 0.98) and the P value for NaF is 45.3%. The natural fluoride concentration Cnw in the raw water was found to be 0.1 mg/L. What is the calculated fluoride concentration in the final treated water? Show your working out:

ANSWERS

Section 1: Language and Literacy

1. a. Maintenance b. schedules c. important d. worn e. dials

2. a. heard b. which c. more easily d. they're

3. a. ii. b. ii. c. i. d. iv. e. iii.
f. ii. g. i. h. iii.

4. a. The majority of protozoa in freshwater are natural aquatic organisms and are of no significance to health. They generally feed on other micro-organisms such as bacteria, cyanobacteria or algae. The greatest diversity of protozoa is found in open surface waters, including water supply sources, but some species can colonise piped water supplies.

b. A hazard has the potential to cause you or others injury or ill-health, damage to property, or harm to the environment. It is everyone's job to look out for hazards.

5. a. DPI Fisheries b. 2004 c. All of the above

d. Answer should include: assessor to check for accuracy in response using information in passage, general comprehensibility, accuracy of vocabulary, grammar, spelling and punctuation.

6. a. Protective face mask and gloves

b. Sunscreen, Long sleeve shirt, Hat

c. Manual handling guidelines

d. Personal flotation device, Work in groups or pairs

e. Protective boots

Section 2: Numeracy

Part A: without a calculator

1. a. 234.63 b. 12 c. 6

2. a. 1/4

3. a. 3^7

4. a. Y = U – D + J b. $\mathbf{Y} = \frac{\mathbf{H} + \mathbf{2}\,(\mathbf{R} - \mathbf{3})}{\mathbf{K}}$ c. $Y = \frac{T - E}{E + 7}$

5. 6786kL/day

Part B: with a calculator

6. a. 23.74 m b. 179.46 m^3
c. 89,730 L

7. a. 0.2 b. 0.8
c. 0.38

8. 887.88 mg/L

This Practice Aptitude Quiz was developed by:

The Australian Apprenticeships and Traineeships Information Service (AATIS) aims to increase awareness of potential apprenticeship and traineeship pathways for students, job hunters, career changers and employers. It also provides up to date information and resources to organisations serving those groups. AATIS runs the Australian Apprenticeships Pathways website, the AusAppPathways Mobile App, and the My Gain YouTube Channel. AATIS is funded by the Australian Government Department of Education and Training.

The Australian Centre for Career Education - www.ceav.vic.edu.au

The Australian Centre for Career Education is a state based peak association for career practitioners working in a range of educational settings. The ACCE provides membership, training and professional development aligned to the national standards for career practitioners. It also provides careers counselling to the general public and consultancy to industry and governments.

For enquiries about this Practice Aptitude Quiz, contact
The Australian Apprenticeships and Traineeships Information Service on
1800 338 022