



Practice Aptitude
– QUIZ –

Water Industry



Practice Aptitude QUIZ

Part 1: About this water resource

Guidance

This Practice Aptitude Quiz is intended to be a general illustration of some of the key learning standards required of people attempting an Australian Apprenticeships entry level qualification in the Water Industry at the Certificate III level.

The quiz focuses on literacy and numeracy questions contextualised to this specific industry.

The quiz can be used by a number of different organisations and people such as careers practitioners with young people, Group Training Organisations and employment services with job seekers.

The Practice Aptitude Quiz can be:

- Used by careers practitioners with individuals or in a class setting to provide general guidance on the level of study involved in undertaking an entry level qualification in this industry;
- Provided to people to enable them to practice their skills before sitting an actual aptitude test;
- Used by Mathematics teachers as a guide to industry maths requirements at the entry point of this particular Australian Apprenticeship;
- Used by teachers as classroom based activities for students in Year 11.

This quiz does not cover aspects such as general knowledge or complex problem solving or reasoning skills.

The level of reading, writing and mathematical skills assessed by this quiz is equivalent to that of a typical young person at Year 11 level.

Please note that rates quoted in this assessment for various items, including pay rates, are not meant to reflect today's values, but are used purely for mathematical purposes.

The quiz should be able to be completed in approximately 45 minutes.

Calculators may be used to complete most parts of this practice exercise.

Answers are located at the end of the quiz.

Water Career, Occupational Information and Job Hunting Resources

Information and links on the Water Industry, careers, job prospects as well as career websites and job hunting resources can be found at www.aapathways.com.au/Career-Resources.



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After the Quiz

There are a range of support services available to help you find out about courses that may help you improve your literacy and numeracy skills and also your readiness for work.

If you are still at school you should discuss any concerns you may have with your career practitioner. Further information may also be provided by an employment service provider, an Australian Apprenticeships Support Network (Apprenticeship Network) provider, a Group Training Organisation or a training provider.

Useful Contacts

Here are some links to job seeker support services:

- Search for your local Australian Apprenticeships Support Network (Apprenticeship Network) provider www.aapathways.com.au/sps
- Find a local Group Training Organisation www.grouptraining.com.au/Find/find_gto.html
- Employment service providers work with eligible job seekers to develop an individually tailored plan. The plan maps out the training, work experience and additional assistance needed to find job seekers sustainable employment - <https://jobsearch.gov.au/>



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Part 2: The Quiz

Section 1 - Literacy, Reading and Grammar

Spelling

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

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

Write the correct spelling of misspelt words below:

Grammar

2. Which of the following correctly completes these sentences? Circle 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



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- 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 _____ office on Saturday, spending two days working in Alice Springs and then _____ due in Adelaide on Wednesday morning.
- their they there they're

Punctuation, Spelling and Grammar

Choose the correct sentence by circling the correct answer to the left:

- 3.
- a. She said, "water is often polluted downstream."
 - b. She said, "Water is often polluted downstream."
- 4.
- a. Mark Paxon, the vice president of crystal water improved profits significantly.
 - b. Mark Paxon, the Vice President of Crystal Water, improved profits significantly.
- 5.
- a. I live in the north–eastern part of the state where the rainfall is higher.
 - b. I live in the North eastern part of the state where the rainfall is higher.
- 6.
- a. My entire team, of Bill, Angie, Tom, and Rashi, worked overtime yesterday.
 - b. My entire team of Bill, Angie, Tom, and Rashi, worked overtime yesterday.
 - c. My entire team of Bill Angie Tom and Rashi, worked overtime yesterday.
 - d. My entire team of Bill, Angie, Tom and Rashi worked overtime yesterday.



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- 7.
- a. If you lodge your interest now you are likley to be involved in the tendor process.
 - b. If you lodjge your intarest now you are likely to be involved in the tender process.
 - c. If you lodge your interest now you are likely to be involved in the tender process.
 - d. If you lodge your intrest now you are likely to be envolved in the tendar process.
- 8.
- a. Your supervisor wanted to know when you will be here?
 - b. Your supervisor wanted to know when you will be here.
- 9.
- a. The recent climatic conditions have contributed to the stream's algae problems.
 - b. The recent climatic condition's have contributed to the streams' algae problems.
 - c. The recent climatic conditions' have contributed to the streams algae problems.
- 10.
- a. The supervisors schedule confirmed he's attending a meeting at 2pm.
 - b. The supervisor's schedule confirmed his attending a meeting at 2pm.
 - c. The supervisor's schedule confirmed he's attending a meeting at 2pm.



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11. Correctly punctuate the following paragraphs by either making the corrections within the paragraph or 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



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Comprehension

- 12. 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 http://www.sunwater.com.au/clare_fishway.htm 18/12/2009

- a.** Who did SunWater work closely with on this project?
- i. Neville Hewitt
 - ii. DPI Fisheries
 - iii. Ned Churchward
 - iv. Burdekin Fish Restocking
- b.** In what year did the construction of the new replacement fishway begin?
- i. 1991
 - ii. 2003
 - iii. 2004
 - iv. 2009



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

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

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



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13. Match the Controls with the hazards. Write your answers in the fourth column in the next page. (Hint: there may be more than one Control.)

Hat

Sunscreen

Long sleeved shirt

Work in groups or pairs

Protective boots

Manual handling guidelines

Personal flotation device

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	



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Section 2 – Mathematical questions

Part A – Without a calculator. Show all working out.

Arithmetic

1. Without using a calculator, calculate the answers to the following:

a. $73.03 + 58.23 + 23.99 + 79.38$ Answer = _____

b. $4 + 7 - 2 + 3$ Answer = _____

c. $3 + 5 \times 2 - 7$ Answer = _____

2. Circle the smallest fraction from the choices below:

a. $\frac{1}{4}$

b. $\frac{27}{32}$

c. $\frac{18}{64}$

d. $\frac{7}{8}$

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

a. 3^7

b. 9^{12}

c. 9^7

d. 3^{12}



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Algebra

4. Manipulate the following equations so that they are in the form $Y =$

a. $D - J = U - Y$ Answer = _____

b. $H + 2(R - 3) = K \times Y$ Answer = _____

c. $Y(E + 7) = T - E$ Answer = _____

General Mathematics

5. An operator is instructed to reduce the flow rate in the plant by 10%. If the current flow rate is 7,540 kL per day, calculate what the new flow rate should be.

Part B – Use a Calculator for this section

Geometry

6. A circular water tank has a diameter of 7.56 m and is 4 m high. Give the following measurements: *Include the units in your answers. Use π as 3.14. To two decimal points.*

a. Circumference of the tank in meters (**hint: $C = \pi D$**)

b. Volume of the tank, if filled with water to the brim in cubic meters. (**hint: $V = \pi r^2 h$**)

c. There are 1,000 litres to 1 cubic meter. How many litres does this tank hold when half-full?



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General Mathematics

7. Express the following as a decimal (calculator permitted):

$$\frac{2}{10}$$

Answer = _____

$$\frac{4}{5}$$

Answer = _____

$$\frac{2}{3} \times \frac{4}{7}$$

Answer = _____

Problem Solving and Comprehension

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

$$F \text{ mg/L (treated water)} = \frac{(M \times K \times P \times 100)}{+C_{rw}}$$

A dry feeder uses 2 kg of NaF (M = 2000g) in one day to treat 1 ML (Vt = 1,000,000L) 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 Crw 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:



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ANSWERS

Section 1 - Literacy, Reading & Comprehension Questions

1. a. Maintenance b. schedules c. important d. worn e. dials
2. a. heard b. which c. more easily d. their; they're
3. b.
4. b.
5. a.
6. d.
7. c.
8. b.
9. a.
10. c.
11. 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.
12. a. ii. DPI Fisheries b. iii. 2004 c. iv. All of the above
d. Assessor to check for accuracy in response using information in passage, general comprehensibility, accuracy of vocabulary, grammar, spelling and punctuation.
13. 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



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Mathematical and problem-solving questions

Part A – Without a calculator

1. a. 234.63 b. 12 c. 6
2. a. $\frac{1}{4}$
3. a. 3^7
4. a. $Y = U - D + J$ b. $Y = \frac{H + 2(R-3)}{K}$ c. $\frac{T-E}{E+7}$
5. 6786kL/day

Part B – With a Calculator

6. a. 23.74 m b. 179.46 m³ c. 89,730 L
7. a. 0.2 b. 0.8 c. 0.38
8. 887.88 mg/L



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This Practice Aptitude Quiz was developed by



Australian Apprenticeships and Traineeship Information Service, which delivers the [Australian Apprenticeship Pathways](#) website, [MyGain](#) (YouTube channel) and [AusAppPathways](#) – Mobile App. The service provides sample Australian Apprenticeships job descriptions and links to more Australian Apprenticeships information and resources. The service 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.**