Read this booklet carefully before sitting the test.

STAT PNG

Skills for Tertiary Admissions Test

Applicant Information Booklet

The Papua New Guinea University of Technology

The University of Goroka

The Pacific Adventist University

More details about STAT PNG can be found on the internet at:

https://statpng.acer.org/

ACER

Contents

> **!** **Read this entire information booklet carefully.**

STAT PNG is produced by the Australian Council *for* Educational Research (ACER). Every effort has been made to ensure the accuracy of information provided in this booklet. However, ACER reserves the right to alter or amend test details and/or test administration details outlined in this booklet.

About STAT PNG

What is STAT PNG?

The Australian Council for Educational Research (ACER) develops the *Skills for Tertiary Admissions Test* (STAT PNG) to help universities admit students who are well suited to a broad range of academic programs.

STAT PNG assesses a range of competencies considered important for successful tertiary study, evaluating skills such as critical thinking, and understanding and analysis of given information. It does not test your knowledge of curriculum or specific academic content.

STAT PNG

- 2 hours and 10 minutes test.
- 70 multiple-choice questions, half verbal and critical reasoning, half quantitative reasoning.
- Presented in units.
- All the information required to answer questions is contained in each unit.

Skills tested

Verbal and critical reasoning

The focus is on interpretation and understanding of ideas in language. Questions may require you to:

- identify the main idea in a passage.
- interpret specific words and phrases.
- paraphrase what is stated.
- infer suggestions and deduce meanings.

Some units test comprehension of demanding and complex language with emphasis on analysing and understanding the information provided. Other units test understanding and processing of ideas presented with emphasis on manipulating information and solving problems.

Quantitative reasoning

The aim is to test your comprehension and application of information presented in scientific and mathematical contexts.

Units may present information in numeric, symbolic, spatial or graphical form.

Questions do not require an in-depth knowledge of the material provided. The focus is on your ability to interpret and apply information, and to use the information provided for decision making and problem solving.

Communicating with applicants

The main way that the STAT PNG office communicates with applicants is via the messaging system located in the applicant's ACER user account. Applicants should check this regularly to ensure that they do not miss important information.

Terms and conditions of sitting STAT PNG

Booking to sit STAT constitutes your acceptance of and an agreement to abide by the conditions in this booklet. These include the test administration and rules, reporting of scores, collection and use of personal information and the use of information for research. Test results may be used by approved authorities for purposes of research into the STAT PNG program. Test data is treated with the utmost confidentiality.

Preparing for STAT PNG

The practice questions included in this *Applicant Information Booklet* are similar to questions in the real test.

Answer sheet

You will record your answers on a special STAT PNG answer sheet (sample p.6). This allows your answers to be scanned and scored by machine. On the *answer sheet* you will find a list of question numbers (questions 1 to 70) and next to each question the letters A B C D with a small circle around each letter.

Mark your answer by completely filling in the circle containing your answer **with pencil**. If you choose option A as the answer to Question 14, record your answer like this:

14   **(A)**   **(B)**   **(C)**   **(D)**

It is important to mark your answers carefully. If you decide to change an answer, erase your mark completely and fill in the circle containing your new answer.

When answering STAT PNG questions on your answer sheet:

- Use lead pencil only.
- Mark your answer clearly.
- Use a good quality eraser.
- Do not make marks outside the designated areas.

> **!** **STAT PNG** questions may be quite difficult. They are designed to measure a wide range of intellectual ability.

Completing your test

- Your answers must be marked directly onto your *answer sheet*, not in your test booklet.
- Do rough work in your test booklet. Extra paper is not allowed.
- Attempt as many questions as possible for the best chance of maximising your score. Record an answer for all questions.
- No marks are deducted for a wrong answer (there is no negative scoring).
- Do not mark more than one answer to a question.

Test taking strategy

- Don't spend too much time on any one question.
- Read the background information for a unit before starting the questions.
- Read through all the answer options, even if you think the first one is correct, before marking your choice.
- See if there are any options you can discard immediately because they are obviously wrong.
- If you think you know the answer to a question, mark it, even if you are not certain. Go on to the next question and come back later if you have time.

Preparation strategy

Use the practice questions in this booklet to practise your exam technique. Practise recording your answers on the *Answer Sheet*. Try to attempt all questions before checking your answers. Further preparation is to read widely and think critically about what you read. Past test papers cannot be provided.

Test Centre Procedures & Rules

Checklist for the test day

You must take these items to the test:

- ❏ Approved photo identification (no photocopies)
- ❏ 2 pencils and an eraser
- ❏ Admission ticket (Please print it if you can. If you cannot, bring an electronic version and the supervisors will write one for you at the test centre)
- ❏ Bank payment receipt for K130

Time at test centre

Expect to be at the test venue **around 3 hrs (or longer)**. Time is needed to check-in all applicants, for pre-test procedures, instructions, distribution, collection and checking of test materials, and actual test time.

You must remain in the test room for the full 2 hours and 10 minutes assigned for the exam. No applicants will be allowed to leave early.

Admission to the test

You will not be admitted to the test unless you are on the attendance list and **bring your photo ID, admission ticket and payment receipt** with you to the test centre.

Prohibited items

The following items are not allowed:

- calculator or dictionary.
- mobile phone or other communication devices.
- audio or recording devices, or earphones.
- books, papers, bags.
- weapons, or objects that could harm others.

Water bottles are permitted. No eating or smoking during the test sessions, or in the test room.

Illness or test venue issues

If you are unwell or if conditions in the test room impact your ability to perform in the test, please tell the supervisor as soon as possible. Issues must be dealt with immediately at the time of the test. Results will not be adjusted for any perceived test day difficulties. You will not be allowed extra time if you leave the room due to illness.

Identification

You must bring one of the following photo identification documents (ID) with you to the test.

The only accepted ID issued within the last 5 years are:

- Secondary student photo ID card.
- Tertiary student photo ID card.
- Workplace photo ID card.
- Other official photo ID card (such as church ID or proof of age card).
- Drivers licence.
- Passport.
- National identity document (PNG NID).

The name on your official identification document must match the name you entered on your test registration.

Your identification document MUST contain:

1. Your full name.
2. A recent embedded photograph.
3. Your signature or a validity date or date of issue.

Test rules and misconduct

STAT PNG test is a high-stakes test; results have the potential to make a major impact on the future study plans of applicants.

ACER has established security procedures and rules, which will be strictly enforced at all times.

It is the responsibility of applicants to ensure they understand that the following behaviours are considered to be breaches of test rules:

- breach of any of the security arrangements for the test.
- attempting to sit the test more than once in a test year.
- failure to follow a test supervisor's instructions at all times.
- giving false or misleading information during the test booking process.
- attempting to gain access to test questions before the test.
- using unauthorised aids (including notes, note paper, calculator, mobile phone).
- attempting to take the test on behalf of another person.
- allowing another person to attempt to take the test on your behalf.
- giving or receiving assistance to someone else during the test.
- talking aloud (unless it is to ask a test supervisor a question) during the test session.
- failure to stop work and put your pencil down immediately when instructed.
- copying another applicant's work.
- leaving the test room without permission.
- creating a disturbance inside or outside the test venue.
- attempting to remove a test book or part thereof, an answer sheet, or any notes, from the test room.
- attempting to copy or memorise all or part of the test.
- attempting to take a recording/image of the test materials.
- discussing or sharing of test content during or after the test.

- using the test questions, their content or information about them for purposes other than your sitting of the test. This includes publishing the test questions or any of their content or information about them on the internet, any digital format or otherwise; and/or passing the test questions, any of their content or information about them to third parties.
- infringement of copyright. Copyright infringement includes: performing those rights or authorising the performance of those rights which are granted at law exclusively to the copyright owner. These rights include the exclusive right to reproduce the copyright work in a material form and to communicate that work to the public.
- in any way breaching (as determined by ACER in its absolute discretion) any of the terms and conditions of your registration to participate in the test.

All acts of suspected rule breaches by applicants will be reported by the test supervisors to ACER.

> **!** **The penalty for any of the above breaches may be the cancellation of the applicant's test and a ban from registering to sit the STAT PNG test on a future occasion.**

Applicants are put on notice that except as expressly provided at law, there is no right to challenge, appeal or seek review of any determination by ACER that misconduct has occurred or in relation to any consequences imposed by ACER for any misconduct. It is possible that the misconduct will be referred to educational institutions, government or another third party to whom such misconduct might be of interest.

Test Booklet Directions (example)

Instructions

1 This test has 70 questions.

2 You will gain the best possible score if you:

- work carefully through the questions in order.
- don't waste too much time on any one question; if necessary, go on to the next question and come back to the difficult ones later.
- mark an answer if you think you know it – even if you are not certain you are correct. Marks are **not** deducted for wrong answers.
- correctly mark each answer you chose on your *Answer Sheet*.

3 Each question has four alternative answer options, represented by the letters **A B C D**. You must choose **one** answer from these alternatives.

Example:

The total number of questions in this test is

A 70 . **B** 50 . **C** 35 . **D** 32 .

Find the letter matching your answer choice.

The correct answer is 70. As the letter **A** represents the answer, you will shade circle 'A' with your pencil on your *Answer Sheet*.

(A) (B) (C) (D)

4 If you want to change your answer, rub it out completely. Only **one** letter should be marked for each question for the answer to be counted in your score.

5 At the end of the test this *STAT PNG Test Booklet* must be handed in. It is the property of ACER.

6 Look through the Test Booklet to check that no pages are blank or misprinted.

7 Do NOT start writing on your *Answer Sheet* until the supervisor tells you to begin.

Filled-in Answer Sheet (example)

STAT PNG
Skills for Tertiary Admission Test

First Name: _____

Family Name: _____

Signature: _____

Today's Date

Day	Month	Year
		20

STAT PNG ID Number

Family Name

Initials

Test Booklet Number

Test Centre Number

Date of Birth

Day	Month	Year

SAMPLE

MARK YOUR ANSWER HERE (one per question)

1 Ⓐ Ⓑ Ⓒ Ⓓ	16 Ⓐ Ⓑ Ⓒ Ⓓ	31 Ⓐ Ⓑ Ⓒ Ⓓ	46 Ⓐ Ⓑ Ⓒ Ⓓ	61 Ⓐ Ⓑ Ⓒ Ⓓ
2 Ⓐ Ⓑ Ⓒ Ⓓ	17 Ⓐ Ⓑ Ⓒ Ⓓ	32 Ⓐ Ⓑ Ⓒ Ⓓ	47 Ⓐ Ⓑ Ⓒ Ⓓ	62 Ⓐ Ⓑ Ⓒ Ⓓ
3 Ⓐ Ⓑ Ⓒ Ⓓ	18 Ⓐ Ⓑ Ⓒ Ⓓ	33 Ⓐ Ⓑ Ⓒ Ⓓ	48 Ⓐ Ⓑ Ⓒ Ⓓ	63 Ⓐ Ⓑ Ⓒ Ⓓ
4 Ⓐ Ⓑ Ⓒ Ⓓ	19 Ⓐ Ⓑ Ⓒ Ⓓ	34 Ⓐ Ⓑ Ⓒ Ⓓ	49 Ⓐ Ⓑ Ⓒ Ⓓ	64 Ⓐ Ⓑ Ⓒ Ⓓ
5 Ⓐ Ⓑ Ⓒ Ⓓ	20 Ⓐ Ⓑ Ⓒ Ⓓ	35 Ⓐ Ⓑ Ⓒ Ⓓ	50 Ⓐ Ⓑ Ⓒ Ⓓ	65 Ⓐ Ⓑ Ⓒ Ⓓ
6 Ⓐ Ⓑ Ⓒ Ⓓ	21 Ⓐ Ⓑ Ⓒ Ⓓ	36 Ⓐ Ⓑ Ⓒ Ⓓ	51 Ⓐ Ⓑ Ⓒ Ⓓ	66 Ⓐ Ⓑ Ⓒ Ⓓ
7 Ⓐ Ⓑ Ⓒ Ⓓ	22 Ⓐ Ⓑ Ⓒ Ⓓ	37 Ⓐ Ⓑ Ⓒ Ⓓ	52 Ⓐ Ⓑ Ⓒ Ⓓ	67 Ⓐ Ⓑ Ⓒ Ⓓ
8 Ⓐ Ⓑ Ⓒ Ⓓ	23 Ⓐ Ⓑ Ⓒ Ⓓ	38 Ⓐ Ⓑ Ⓒ Ⓓ	53 Ⓐ Ⓑ Ⓒ Ⓓ	68 Ⓐ Ⓑ Ⓒ Ⓓ
9 Ⓐ Ⓑ Ⓒ Ⓓ	24 Ⓐ Ⓑ Ⓒ Ⓓ	39 Ⓐ Ⓑ Ⓒ Ⓓ	54 Ⓐ Ⓑ Ⓒ Ⓓ	69 Ⓐ Ⓑ Ⓒ Ⓓ
10 Ⓐ Ⓑ Ⓒ Ⓓ	25 Ⓐ Ⓑ Ⓒ Ⓓ	40 Ⓐ Ⓑ Ⓒ Ⓓ	55 Ⓐ Ⓑ Ⓒ Ⓓ	70 Ⓐ Ⓑ Ⓒ Ⓓ
11 Ⓐ Ⓑ Ⓒ Ⓓ	26 Ⓐ Ⓑ Ⓒ Ⓓ	41 Ⓐ Ⓑ Ⓒ Ⓓ	56 Ⓐ Ⓑ Ⓒ Ⓓ	
12 Ⓐ Ⓑ Ⓒ Ⓓ	27 Ⓐ Ⓑ Ⓒ Ⓓ	42 Ⓐ Ⓑ Ⓒ Ⓓ	57 Ⓐ Ⓑ Ⓒ Ⓓ	
13 Ⓐ Ⓑ Ⓒ Ⓓ	28 Ⓐ Ⓑ Ⓒ Ⓓ	43 Ⓐ Ⓑ Ⓒ Ⓓ	58 Ⓐ Ⓑ Ⓒ Ⓓ	
14 Ⓐ Ⓑ Ⓒ Ⓓ	29 Ⓐ Ⓑ Ⓒ Ⓓ	44 Ⓐ Ⓑ Ⓒ Ⓓ	59 Ⓐ Ⓑ Ⓒ Ⓓ	
15 Ⓐ Ⓑ Ⓒ Ⓓ	30 Ⓐ Ⓑ Ⓒ Ⓓ	45 Ⓐ Ⓑ Ⓒ Ⓓ	60 Ⓐ Ⓑ Ⓒ Ⓓ	

DO NOT FOLD OR DEFACE THIS SHEET IN ANY WAY

Practice Questions

UNIT 1

Question 1

1   The point of the cartoon is to suggest that work is

WE GO TO WORK   TO EARN THE CASH   TO BUY THE FOOD   TO GAIN THE STRENGTH   TO GO TO WORK
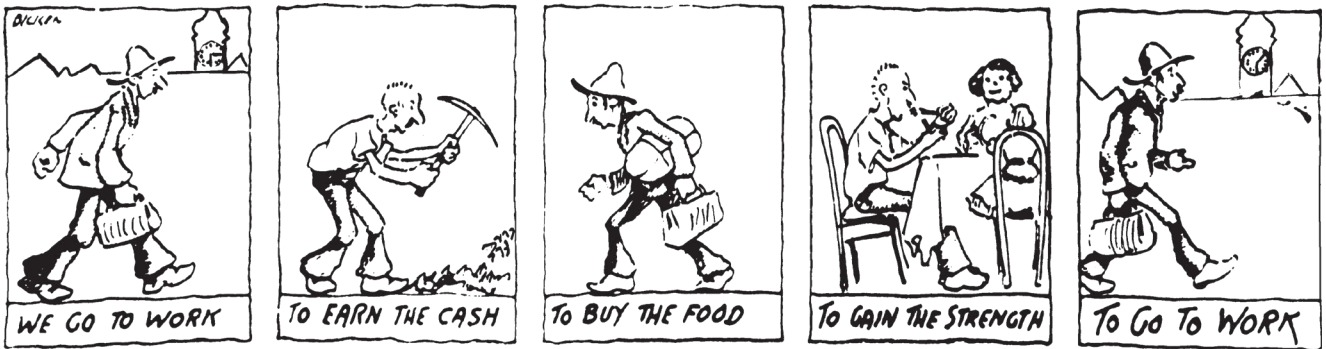
    A   habitual and pointless.

    B   simple and comforting.

    C   strenuous but satisfying.

    D   demanding but necessary.

UNIT 2

Question 2

In the grid below, different letters represent different whole numbers less than 20. The numbers to the right and below the grid are row and column totals.

For example, $Q + L + Z + Z = 46$.

Q	L	Z	Z	46
K	K	K	K	28
K	K	Q	Q	32
K	Z	L	Q	40

   30   38   X   Y

2   The value of Q is

    A   7 .   **C**   11 .

    B   9 .   **D**   13 .

UNIT 3

Questions 3 – 6

The following are four comments which have been made about experts and the nature of expertise.

   I   An expert is someone who has made all the mistakes which can be made in a very narrow field.

(Niels Bohr)

   II   In the beginner's mind there are many possibilities; in the expert's mind there are few.

(Shunryu Suzuki)

   III   Where facts are few, 'experts' are many.

(Donald R. Gannon)

   IV   An expert is a person who avoids the small errors as he sweeps on to the grand misconception.

(Benjamin Stolberg)

3   Comment I views expertise as the result of

    A   persistence and a restricted approach.

    B   an open mind and a creative approach.

    C   a disciplined mind and an ordered approach.

    D   natural brilliance and an imaginative approach.

4   Comment II emphasises experts'

    A   patience.

    B   inspiration.

    C   experience.

    D enthusiasm.

5   The 'experts' in comment III

    A   are cooperative by nature.

    B   are competitive by nature.

    C   thrive where there is certainty.

    D   thrive where there is uncertainty.

6   Which two comments treat a normally negative characteristic as a positive characteristic in experts?

    A   I and II

    B   I and III

    C   II and IV

    D   III and IV

UNIT 4

When fighting forest fires, a major problem for firefighters is dealing with the heat. Heat enters, leaves or is produced in a firefighter's body by the following processes:

1   radiation — heat from the fire and the sun radiate to the firefighter's body
2   conduction/convection — body heat is carried away by the surrounding air
3   metabolism — heat is produced in the firefighter's body
4   evaporation of sweat — heat is removed from the firefighter's body when sweat evaporates from skin and clothing
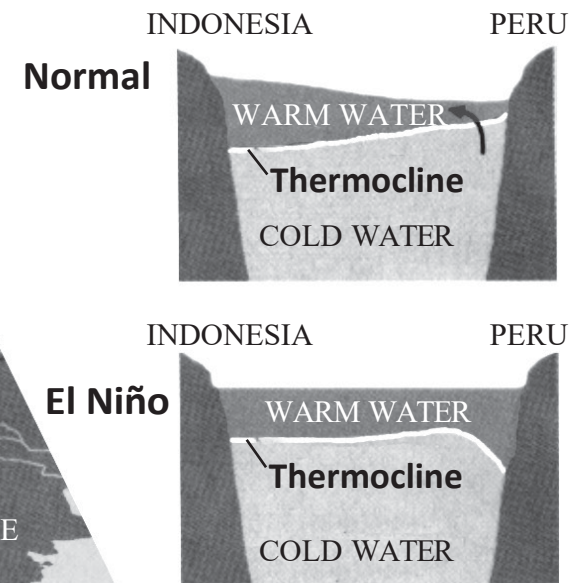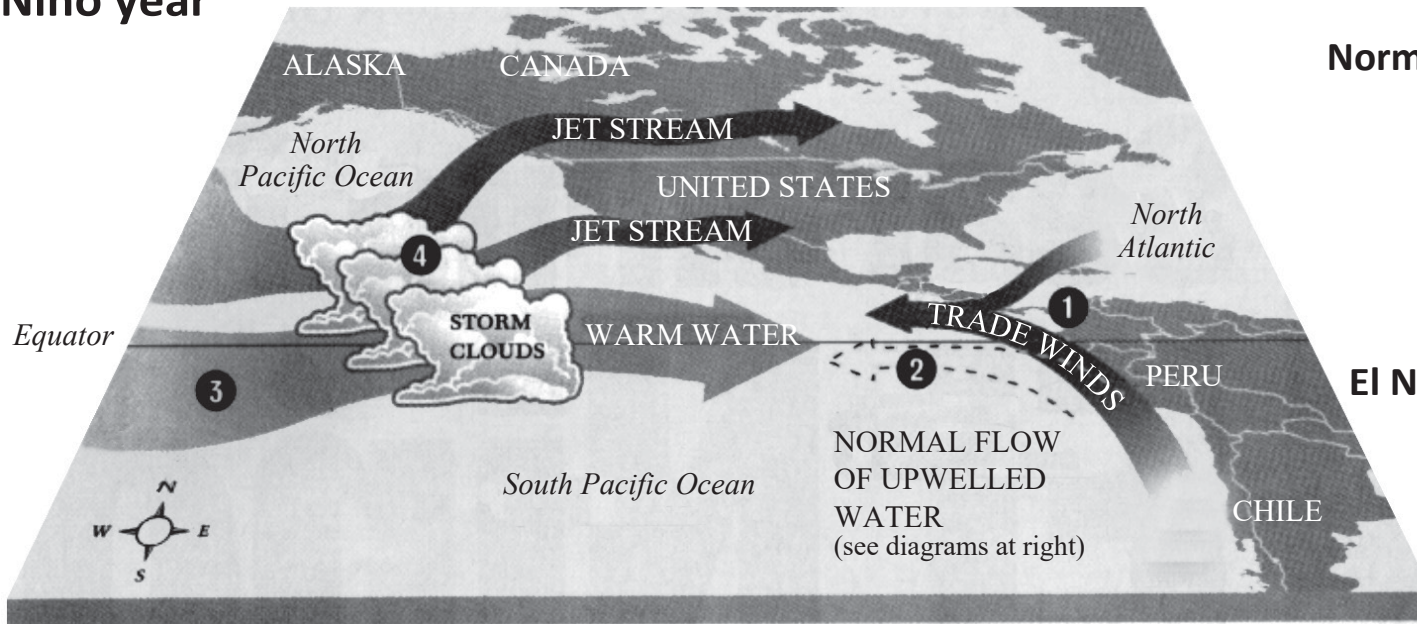
In a study of heat balance in firefighters, two groups of firefighters built a firebreak — a hard physical task. One group built their firebreak next to a fire. The other group did exactly the same work under the same conditions, except that no fire was burning nearby. The table below gives the average results for the firefighters in the two groups.

	Amount of heat gained or lost per minute by the body	
Process	**fire nearby**	**no fire nearby**
Radiation	gain of 260 joule	gain of 51 joule
Conduction / convection	loss of 60 joule	loss of 80 joule
Metabolism	gain of 488 joule	gain of 561 joule
Evaporation of sweat	loss of 688 joule	**?**

- Assume that the figures above apply to any individual firefighter.
- Although some of the processes above can transfer heat to or from a firefighter, this unit and the table refer to net gains or losses of heat by each process.

7   When fighting forest fires, the body of a firefighter

    A   loses heat by radiation and gains heat by conduction/convection.
    B   loses heat by both radiation and by conduction/convection.
    C   gains heat by radiation and loses heat by conduction/convection.
    D   gains heat by both radiation and by conduction/convection.

8   The heat lost by evaporation of sweat from the body of a firefighter in one minute while building a firebreak without a fire nearby is

    A   532 joule.
    B   590 joule.
    C   612 joule.
    D   688 joule.

9   Which one of the following increases when a firefighter moves from an area where there is no fire nearby to an area where there is a fire nearby?

    A   the amount of heat produced per minute by metabolism
    B   the amount of heat lost per minute by conduction/convection
    C   the amount of heat lost per minute by the evaporation of sweat
    D   none of **A** or **B** or **C**

El Niño year

ALASKA   CANADA

North
Pacific Ocean

JET STREAM

UNITED STATES

JET STREAM

4

North
Atlantic

Equator

STORM
CLOUDS

WARM WATER

TRADE WINDS

1

3

2

PERU

South Pacific Ocean

NORMAL FLOW
OF UPWELLED
WATER
(see diagrams at right)

CHILE

N
W   E
S

INDONESIA   PERU

Normal

WARM WATER

Thermocline

COLD WATER

INDONESIA   PERU

El Niño

WARM WATER

Thermocline

COLD WATER

1

Normal year: The trade winds blow from east to west, pulling warm water behind.

El Niño year: The trade winds slacken, for largely mysterious reasons.

2

Normal year: Cold, nutrient-rich water wells up from below, supporting the Pacific food chain.

El Niño year: Stationary warm water prevents upwelling. Fish stocks fall.

3

Normal year: A pool of warm water sits off Indonesia, bringing rains to the region.

El Niño year: The warm water sloshes east, taking the storm clouds with it.

4

Normal year: The jet streams deliver rain to southern Mexico and the Pacific Northwest.

El Niño year: The jet streams shift north, and so do the rains.

UNIT 5

This unit is based on the diagram on the previous page.

10   The El Niño phenomenon is first indicated by variations in

   A   water currents.

   B   storm clouds.

   C   jet streams.

   D   winds.

11   The cross-section diagrams to the right of the main map draw attention to the effects of

   A   cold water in creating rough seas and rain-bearing storm clouds.

   B   unnatural increases in water volume on overall sea levels.

   C   global warming on the average temperature of the ocean.

   D warm water fluctuations on weather and the food chain.

12   In an El Niño year, absence of warm water is likely to cause Indonesia to experience

   A   storms.

   B   reduced rainfall.

   C   cold wind blasts.

   D   stronger jet streams.

13   One effect of El Niño in 1982 was to destroy the anchovy fishing industry in Peru. According to the information given in the diagrams and text, the most likely reason for this was that

   A   stronger trade winds off the coast of Peru made fishing hazardous.

   B   the fish were driven away by cold water welling up from below.

   C   jet streams redirected to the south caused havoc.

   D   the fish were deprived of food.

14   In an El Niño year floods are caused in desert regions of South America because

   A   the southerly jet stream from Indonesia has caused more wetness and cold.

   B   deep cold water has risen abnormally to flood proportions.

   C   large areas of warm water have settled along the coast.

   D   overall sea levels have dropped due to trade winds.

UNIT 6

Questions 15 – 18

At Runalong Fire Station there are seven firefighters (1, 2, 3, 4, 5, 6, 7). It is necessary to have three firefighters at the station each night in case of emergency, and the Firefighters' Union requires that each firefighter works the same number of nights.

Schedules I–IV were prepared for consideration.

	I	II	III	IV
Sunday	{1,2,4}	{1,2,4}	{1,2,4}	{1,2,4}
Monday	{2,3,5}	{2,3,5}	{2,3,5}	{2,3,5}
Tuesday	{3,4,6}	{3,4,6}	{3,4,6}	{3,4,6}
Wednesday	{4,5,7}	{4,5,7}	{1,2,4}	{4,5,7}
Thursday	{1,2,4}	{5,6,1}	{5,6,1}	{5,6,1}
Friday	{2,3,5}	{6,7,2}	{6,7,2}	{7,1,2}
Saturday	{3,4,6}	{7,1,3}	{7,1,3}	{6,1,3}

15   Which one of the schedules meets the requirements of the Firefighters' Union?

A   I   **C**   III
B   II   **D**   IV

Questions 16 – 18 refer to the following additional information:

A schedule can be thought of as a set of v objects (in this case, firefighters) that have to be arranged into b sets (in this case, one set for each day of the week) all of size k and such that each object occurs the same number of times (r) in the schedule and only once in any set. For the firefighters' schedules, $v = 7$, $b = 7$, $k = 3$, and $r = 3$.

16   If $v = 3$, $b = 6$, $k = 1$, $r = 2$, which one of the following completes the schedule {1}, {2}, {3}, {1}, {2}, . . .?

A   {1}   **C**   {3}
B   {2}   **D**   neither A, nor B, nor C

17   The schedule {1,2}, {2,3}, {x,y} is a schedule for which $v = 3$, $b = 3$, $k = 2$, $r = 2$, if

A $x = 1$, $y = 2$.   **C** $x = 2$, $y = 2$.
B $x = 1$, $y = 3$.   **D** $x = 2$, $y = 3$.

18   The schedule   {1,2,3}   {4,5,6}   {7,8,9}   {1,4,7}
                           {2,5,8}   {3,6,9}   {1,5,9}   {2,6,7}
                           {3,4,8}   {1,6,8}   {2,4,9}   {x,y,z}

is a schedule for which $v = 9$, $b = 12$, $k = 3$, $r = 4$, if

A $x = 1$, $y = 2$, $z = 4$.   **C** $x = 2$, $y = 4$, $z = 6$.
B $x = 1$, $y = 3$, $z = 5$.   **D** $x = 3$, $y = 5$, $z = 7$.

UNIT 7

The following passage is adapted from a book on the nature of play.

The player who trespasses against the rules or ignores them is a 'spoil-sport'. The spoil-sport is not the same as the false player, the cheat; for the latter pretends to be playing the game and, on the face of it, still acknowledges the magic circle. It is curious to note how much more lenient society is to the cheat than to the spoil-sport. This is because the spoil-sport shatters the play-world itself. By withdrawing from the game he reveals the 5
relativity and fragility of the play-world in which he had temporarily shut himself with others. He robs play of its illusion – a pregnant word which in Latin means literally 'inplay'. Therefore he must be cast out, for he threatens the existence of the play-community.

In the world of high seriousness, too, the cheat and the hypocrite have always had 10
an easier time of it than the spoil-sports, here called apostates[1], heretics, innovators, prophets, conscientious objectors, etc. It sometimes happens, however, that the spoil-sports in their turn make a new community with rules of its own. The outlaw, the revolutionary, the member of a secret society, indeed heretics of all kinds, are of a highly associative if not sociable disposition, and a certain element of play is prominent 15
in all their doings.

[1] An apostate is someone who abandons his/her religion, vows, principles, cause, etc.

19   The phrase 'magic circle' (line 3) most likely refers to

    A   the real world.
    B   a particular kind of game.
    C   the special status of the play-world.
    D   the privileged few who determine the rules of a game.

20   The writer suggests that society is more lenient to the cheat than to the spoil-sport (lines 10 and 11) because

    A   cheats are rarely caught.
    B   cheats usually hold positions of power.
    C   cheats transgress society's rules without undermining them.
    D   society recognises that everybody cheats at some time or another.

21   According to the passage, the 'play-world'

    A   cannot coexist with the real world.
    B   cannot be distinguished from the real world.
    C   is impervious to the will or behaviour of the participants.
    D   is completely dependent on the compliance of the participants.

UNIT 8

In some areas of the world, marine birds such as gulls feed on mussels washed up on the beaches. To break open the shells, the birds carry the mussels to heights and drop them onto hard surfaces, such as rocks or wet beach sand.

Experimental evidence indicates that the minimum drop height required to fracture a mussel shell depends on its size, and also on the nature of the surface onto which it is dropped. The speed on impact with the ground can be related to the mussel's drop height and its shell length.

The graphs in Figures 1 to 4 show the relationships between the size, impact speed, and drop height of mussels. The figures are based on the results of extensive mussel dropping experiments that attempted to simulate what the birds do.

Assume that all mussels referred to in the following questions are described by these relationships.
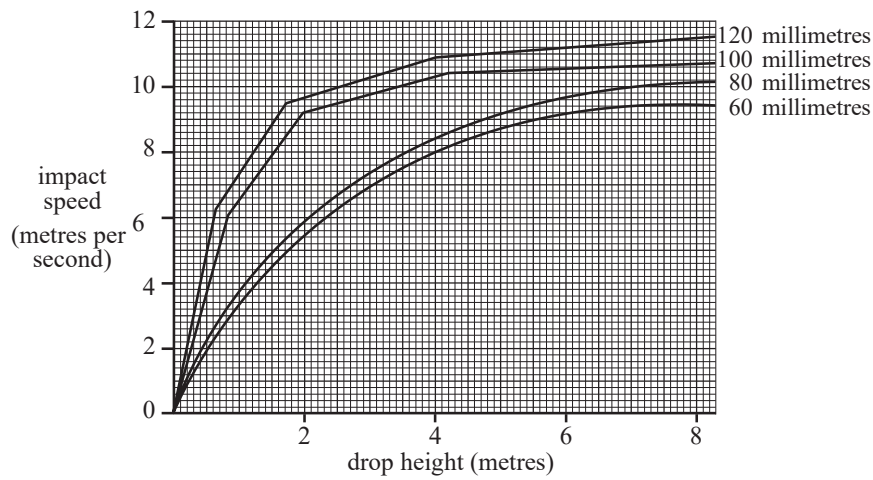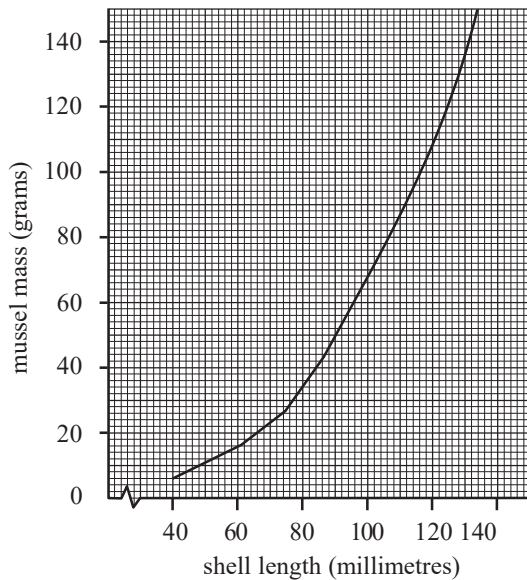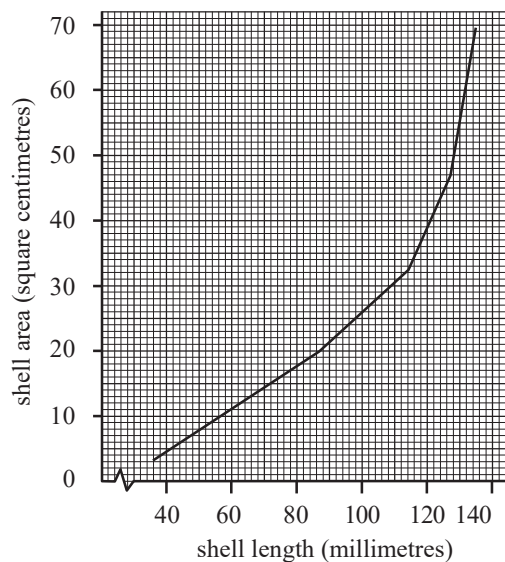

Figure 1

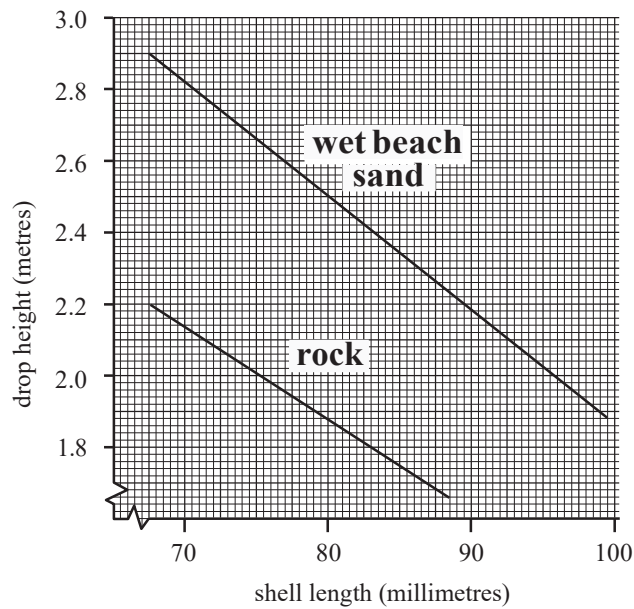**Figure 2**

Figure 3

Figure 4

22   An 80 gram mussel has a shell area closest to

A   20 square centimetres.   C   40 square centimetres.
B   24 square centimetres.   D   45 square centimetres.

23   Which one of the following is the smallest drop height required to fracture three mussels with lengths 75 millimetres, 85 millimetres, and 100 millimetres, when all three are dropped onto wet beach sand?

A   1.90 metres   C   2.67 metres
B   2.35 metres   D   3.00 metres

24   Two mussels are dropped from a height of 2.5 metres onto wet beach sand. Mussel *X* has a mass of 30 grams and mussel *Y* has a mass of 60 grams.

According to the available evidence,

A   only mussel *X* will fracture.   C   both mussels will fracture.
B   only mussel *Y* will fracture.   D   neither mussel will fracture.

25 For a group of mussels which all have a shell length of 80 millimetres, the difference between the drop heights required to fracture the mussels when they drop onto rock and wet beach sand is closest to

A   0.6 metres.   C   1.9 metres.

B   1.0 metres.   D   2.5 metres.

26 Which of the following is closest to the lowest impact speed required to fracture a 30 gram mussel by impact with wet beach sand?

A   5.5 metres per second   C   8.4 metres per second

B   6.8 metres per second   D   10 metres per second

Answers

Unit 1: Work Cartoon (Verbal Reasoning)
    1   A

Unit 2: Grid (Quantitative Reasoning)
    2   B

Unit 3: Expert Comments (Verbal Reasoning)
    3   A
    4   C
    5   D
    6   A

Unit 4: Firefighters (Quantitative Reasoning)
    7   C
    8   A
    9   C

Unit 5: El Niño (Verbal Reasoning)
    10   D
    11   D
    12   B
    13   D
    14   C

Unit 6: Runalong Fire Station (Quantitative Reasoning)
    15   B
    16   C
    17   B
    18   D

Unit 7: The Spoil Sport (Verbal Reasoning)
    19   C
    20   C
    21   D

Unit 8: Mussels (Quantitative Reasoning)
    22   C
    23   C
    24   B
    25   A
    26   B