VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

Victorian Certificate of Education 2021

General Achievement Test

Wednesday 9 June 2021

Reading time: 10.00 am to 10.15 am (15 minutes)
Writing time: 10.15 am to 1.15 pm (3 hours)

QUESTION BOOK

Structure of book

Type of questions	*Number of questions to be answered*	*Suggested times (minutes)*
Writing Task 1	1	30
Writing Task 2	1	30
Multiple-choice questions	70	120

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners, rulers and an English and/or bilingual dictionary.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or correction fluid/tape.
- No calculator is allowed in this test.

Materials supplied
- Question book of 40 pages
- Answer book for **both** Writing Task 1 and Writing Task 2
- Answer page for multiple-choice questions on page 15 of the answer book

Instructions
- Write your **student number** on the answer book.
- Write your **name** on the multiple-choice answer page on page 15 of the answer book.
- Follow the times suggested for each task.
- All written responses must be in English.

At the end of the test
- You may keep this question book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

WRITING TASK 1	*To be answered in the answer book.* *You are advised to allocate 30 minutes to this task.*

Consider the information on these two pages.

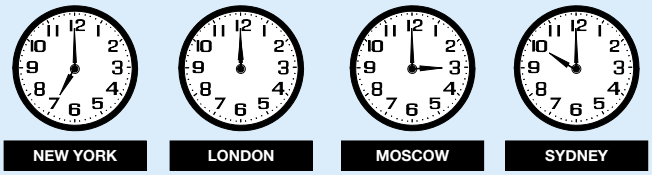
Develop a piece of writing presenting the main information in the material. You should **not** present an argument.

Your piece will be judged on:

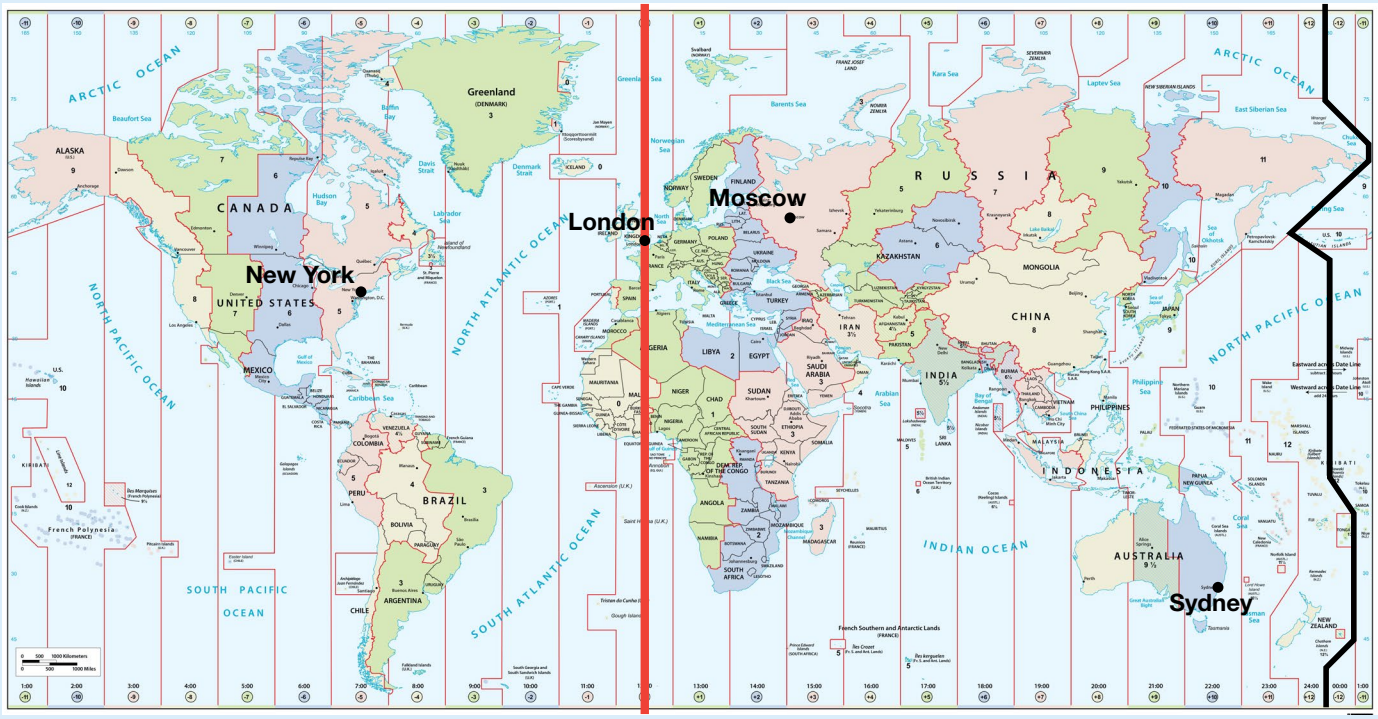
- how well you organise and present your understanding of the material
- your ability to communicate the information effectively
- how clearly you express yourself.

Time

noun
the indefinite continued progress of existence and events in the past, present and future, regarded as a whole



'All we have to decide is what to do with the time that is given to us.'
JRR Tolkien



The prime meridian (shown by the red line) is the 0 degrees longitude from which Greenwich Mean Time (GMT) is calculated. The International Date Line (shown by the black line) separates two consecutive calendar dates.

A TIMELINE OF TIME-KEEPING

3500 BCE
Sundials are commonly used in China and Egypt.

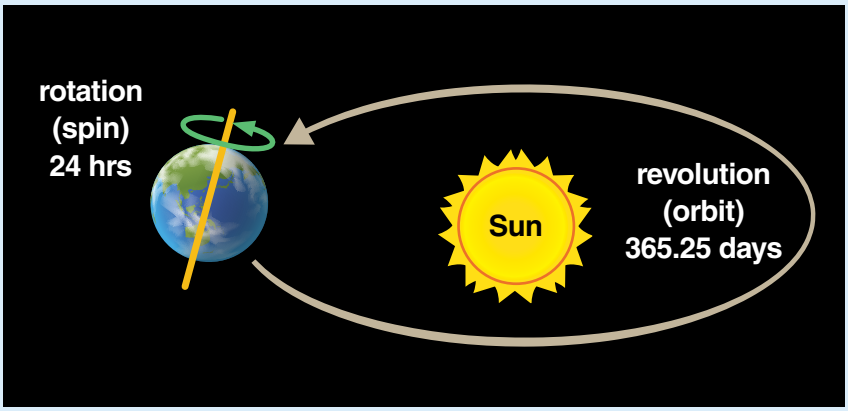
45 BCE
Ancient Rome's Julian calendar includes a leap year every four years.

8th to 16th centuries
Hourglasses are used in Europe.

1571
Queen Elizabeth I receives a wristwatch adorned with jewels.

1582
Pope Gregory XIII introduces the Gregorian calendar, a refinement of the Julian calendar; still in use.

1750s
Development of maritime clocks enables sailors to determine their longitude.



TIME'S PACES

**When I was a child I laughed and wept,
Time crept.**

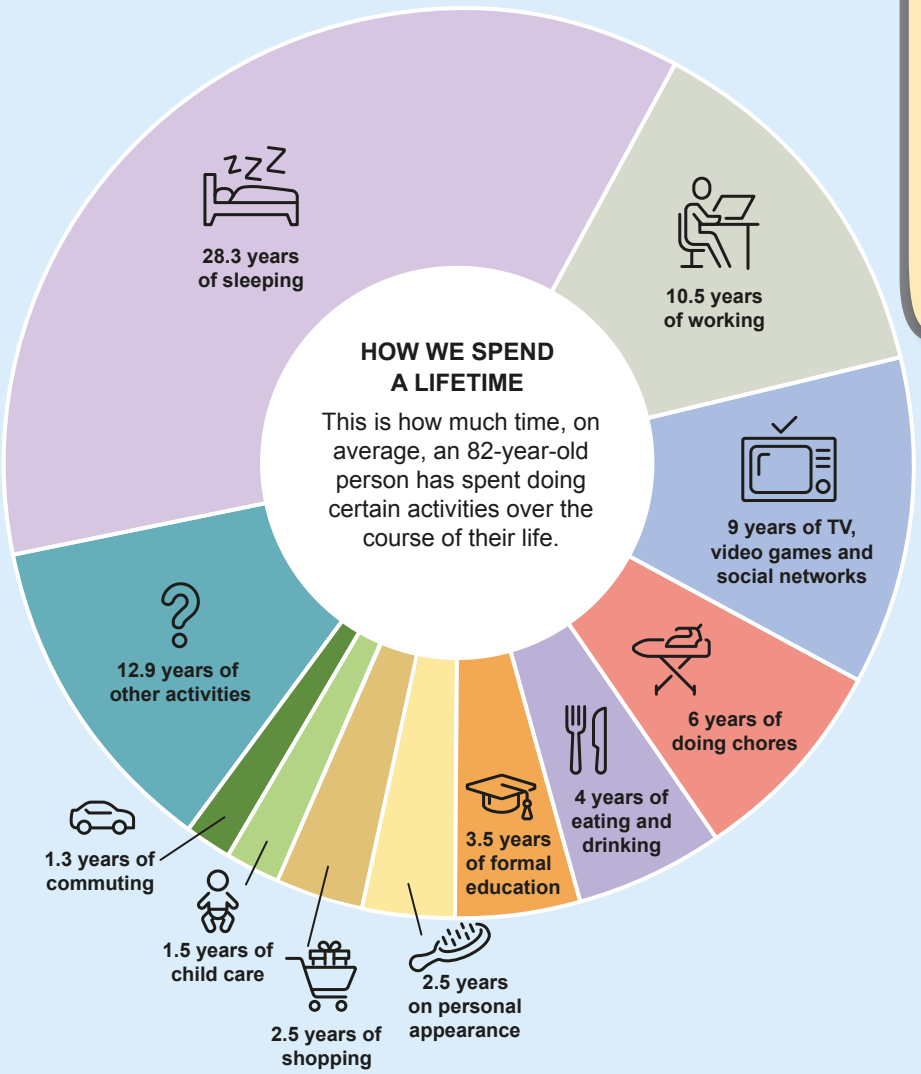
**When I was a youth I waxed more bold,
Time strolled.**

**When I became a full-grown man,
Time ran.**

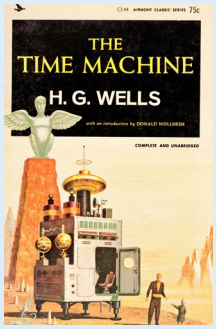
**When older still I daily grew,
Time flew.**

**Soon I shall find, in passing on,
Time gone.**

adapted from a poem by Henry Twells



Film: *Back to the Future* (1985)



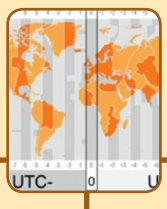
Novel by HG Wells (1895)

The Doctor from *Doctor Who* and her time-travelling machine, the TARDIS (from TV series, 2018)

1878
World time zones are proposed, each spaced about 15 degrees of longitude apart.

1914
Wearing wristwatches is popularised by their use in World War I to better coordinate battles.

1955
Atomic clocks redefine a 'second' – the time it takes a caesium-133 atom in a ground state to oscillate 9 192 631 770 times.



1960s Coordinated Universal Time (UTC) replaces GMT as the world's time standard, after atomic clocks redefine a second.

1970s
The first digital watches are developed.

2015
Improved 'smart' watches, which use advanced computer technology, are released onto the market.

WRITING TASK 2 ***To be answered in the answer book in blue or black pen.***
You are advised to allocate 30 minutes to this task.

Consider the statements below.

Based on **one** or **more** of the statements, develop a piece of writing presenting your point of view.

Your piece of writing will be judged on:

- the extent to which you develop your point of view in a reasonable and convincing way
- how effectively you express yourself.

> Having choices is fundamental to a happy life.

> We may not always make the right choices, but we should commit to those we make.

> We are judged by the choices we make.

> Having too much choice can be worse than having none.

MULTIPLE-CHOICE QUESTIONS

Answer this section in the GAT ANSWER BOOK.
Mark your answers on the Multiple-Choice Answer Page.

You are advised to allocate 2 hours to this task.

Answer **all** questions in pencil.

Shade your answers on the multiple-choice answer page (page 15) of the answer book.
Choose the response that is **correct**, or that **best answers the question**.

A correct answer scores 1; an incorrect answer scores 0.
Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

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UNIT 1

Question 1

1 The cartoon suggests that the person

A feels liberated.
B is embarrassed.
C seeks acknowledgement.
D is enjoying their solitude.

UNIT 2

Questions 2 – 5

< n, m > represents nD + nm, where n and m can be integers and fractions and may be positive, negative or zero.

For example,

< 3, 2 > represents 3D + 6

< 1, –5 > represents D – 5

< 6, $\frac{1}{3}$ > represents 6D + 2.

Note: The rules for multiplication are:
- positive × positive = positive
- negative × positive = negative
- positive × negative = negative
- negative × negative = positive.

2 What does < 7, 2 > represent?

A 2D + 7
B 2D + 14
C 7D + 2
D 7D + 14

3 What does < 4, 7 > + < –6, 3 > represent?

A –2D + 10
B 10D + 46
C 10D + 10
D –10D – 21

4 What does $< 4, \frac{1}{2} > + < 2, -3 >$ represent?

A $8\mathrm{D} + 3$

B $6\mathrm{D} - \frac{3}{2}$

C $6\mathrm{D} - 4$

D $2\mathrm{D} + 3$

5 What does $< v, w > + < v, x >$ represent?

A $2v\mathrm{D} + w + x$
B $2v(\mathrm{D} + w + x)$
C $v(\mathrm{D} + w + x)$
D $v(2\mathrm{D} + w + x)$

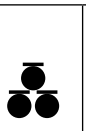
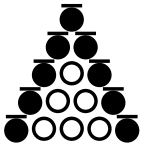
UNIT 3

Questions 6 – 10

In ancient times, before a battle, Roman soldiers would line up in rows to form a triangular shape known as a *wedge*. There were two parts of the wedge:

- Some of the soldiers would hold up their shields to form a *shield wall*.
- Soldiers inside the *shield wall* did not hold up their shields, as shown in the table below.

The table shows how the number of soldiers in both parts of the wedge increased as the number of rows in the wedge increased.

			…	
Number of rows in the wedge	2	3	…	5
Total number of soldiers in the wedge	3	6	…	15
Number of soldiers in the shield wall	3	5	…	9

soldier in shield wall

soldier **not** in shield wall

6 In a 10-row wedge, how many soldiers are **not** in the shield wall?

A 18
B 36
C 45
D 81

7 Suppose a wedge has 17 soldiers in the shield wall.

How many more soldiers are needed to make two more rows?

A 9
B 11
C 19
D 21

8 In wedges, are the numbers of soldiers in each part of the wedge even only, odd only, or either even or odd?

	Number of soldiers in the shield wall	**Number of soldiers <u>not</u> in the shield wall**
A	even only	odd only
B	odd only	even or odd
C	even or odd	odd only
D	even or odd	even or odd

9 How many soldiers are in the shield wall when the wedge has seven rows?

A 11
B 13
C 14
D 15

10 In a wedge with a total of 66 soldiers, how many soldiers are in the shield wall?

A 11
B 21
C 22
D 33

UNIT 4

Questions 11 – 14

The following poem is about camels, which are used in some parts of the world to carry goods.

Camels

I see them swaying their strange heads like geese,
nineteen camels in a string like geese in flight;
as if approaching a problem, or in quest
but baffled a little, a little unsure of their right.

But I am glad their supercilious[1] look
sees as I see the powdery town, the tall
activity of streets, the buttoned-up faces,
the cars like secret agents, the want of it all.

Gentle and sure as pianists' hands, their feet
deliberating on the stone press out
in rhythms that have nothing to do with us
the coins of their aloofness in scorn or doubt.

The motion of the blind or the very proud:
they could be blind; but where their masked eyes fall
they have the sailor's distant and innocent gaze
for where this ends, for the limit and want of it all.

Terence Tiller

[1] *supercilious*: superior, arrogant

11 Which of the following pairs best describes the contrast between the first and second verses?

	In the first verse, the camels seem …	**In the second verse, the camels seem …**
A	rebellious.	deferential.
B	contemptuous of humans.	disciplined.
C	blindly obedient to humans.	indifferent to their surroundings.
D	tentative.	disdainful of their surroundings.

12 The words ‘buttoned-up faces,/ the cars like secret agents’ (lines 7 and 8) suggest that, to the speaker, the town’s inhabitants seem

A melodramatic.
B rather comical.
C guarded and somewhat hostile.
D clever but somewhat unscrupulous.

13 The repetition of the words ‘want of it all’ (line 8 and line 16) emphasises the speaker’s

A curiosity.
B optimism.
C apprehension.
D disillusionment.

14 In the poem as a whole, the speaker suggests that the camels

A seek closer ties to the human world.
B are antagonistic to the human world.
C detach themselves from the human world.
D are wholly subjugated by the human world.

UNIT 5

Questions 15 – 18

In its waste management program, a local council collects three types of waste: *general rubbish*, *recyclable materials* and *green waste*. Only one type of waste is collected each week.

The 52 weeks of the year are numbered, in order. Waste is collected according to the following schedule:

- If the week is a multiple of four, *recyclable materials* are collected.
- If the week is a multiple of three but not a multiple of four, *green waste* is collected.
- On all other weeks, **only** *general rubbish* is collected.

15 From the start of the year, when *green waste* has been collected five times, how many times has *general rubbish* been collected?

A seven times
B eight times
C nine times
D ten times

16 Which of the following correctly describes the schedule for weeks 30 to 33?

	week 30	**week 31**	**week 32**	**week 33**
A	*general rubbish*	*general rubbish*	*green waste*	*recyclable materials*
B	*green waste*	*general rubbish*	*general rubbish*	*green waste*
C	*recyclable materials*	*general rubbish*	*general rubbish*	*green waste*
D	*green waste*	*general rubbish*	*recyclable materials*	*green waste*

17 How many more times per year is *general rubbish* collected than *green waste*?

A 13
B 14
C 16
D 17

18 Which is the first week of the year in which *green waste* is collected in the week immediately after the collection of *recyclable materials*?

A week 4
B week 9
C week 16
D week 21

UNIT 6

Questions 19 – 21

The following passage is from a biography of Nobel Prize-winning author Patrick White.

For a time Patrick White credited a Romanian crank in the Sydney suburbs with saving his life. Dr Herman Morgenstern was treating his asthma with calcium injections and long sessions under blue lights. The results seemed miraculous. One afternoon in April 1958, White turned up at the Romanian's surgery wanting a little something to help him through the ordeal he faced that evening. Morgenstern gave him a pill and lift to Martin Place, where White was to be given the Miles Franklin Award for *Voss*. "As it was the first time awarded," he wrote to his friends David and Gwen Moore, "the bull[1] that went with it was most alarming".

Among the television cameras and literary bores gathered at the ceremony was the Prime Minister, Bob Menzies. Genial, huge with the dewlaps[2] of a sea lion, Menzies had been prime minister for a decade. White's late, radical reputation might suggest this meeting was fraught with difficulty … Not at all. Though White had toyed with revolution during the war, such ideas had died on his return home. Revolutions were for elsewhere but not for Australia. Once settled in Sarsaparilla[3] with his vegetables and dogs, the conservative instincts of his family reasserted themselves.

[1] *bull*: nonsense
[2] *dewlaps*: loose skin on the throat
[3] *Sarsaparilla*: White's farm near Sydney

19 Dr Morgenstern's treatment of White's asthma is depicted as

A groundbreaking and astounding.
B negligent and the results coincidental.
C conventional and the results anticipated.
D unconventional and the results a surprise.

20 The writer implies in the second paragraph that

A parents indoctrinate us.
B families shape our beliefs.
C we like to live the way our parents did.
D we depend on our families for too long.

21 For White, life at Sarsaparilla was

A dull and provincial.
B lived at a frantic pace.
C ordered and predictable.
D unpredictable and chaotic.

UNIT 7

Questions 22 – 25

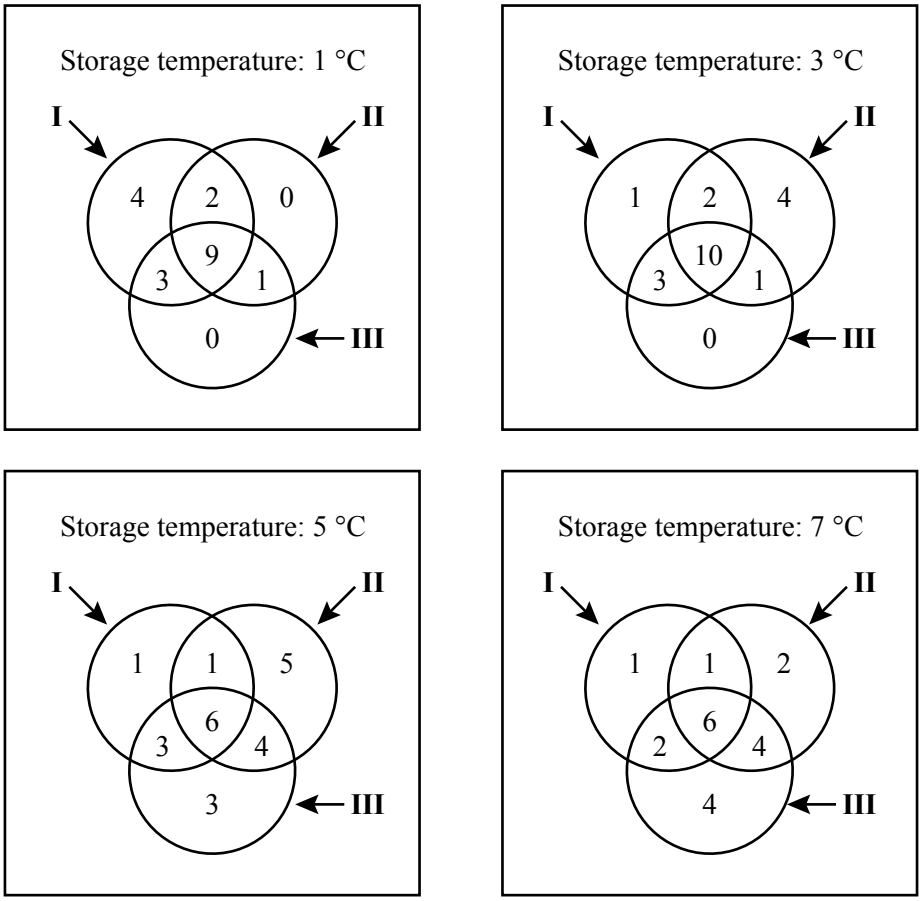
Vegetables are often packed in bags designed to keep them fresh.

In an effort to keep vegetables fresh for longer, three new types of bag – **I**, **II** and **III** – were developed.

The ability of each of **I**, **II** and **III** to keep 30 types of vegetable fresh was tested at four different temperatures (1 ºC, 3 ºC, 5 ºC and 7 ºC). Each type of vegetable was tested in each type of bag. Vegetables were classified as *long-lasting* if they stayed fresh for at least four days longer than they did when stored at the same temperature without a bag.

The figures below show how many types of vegetable, packed in **I**, **II** and **III**, were long-lasting at each storage temperature.

For example, at a storage temperature of 1 ºC, of the 30 types of vegetable tested:
- four were long-lasting when packed in **I**, but not when packed in **II** or in **III**
- one was long-lasting when packed in **II** and in **III**, but not when packed in **I**.



Note: All conditions in the tests were identical other than the temperature difference indicated in the figures.

22 At 1 ºC, how many vegetables were **not** long-lasting in any of the bags?

A 4
B 9
C 11
D 15

23 At 5 ºC, how many vegetables packed in **II** were long-lasting?

A 0
B 5
C 14
D 16

24 At 7 ºC, of the vegetables that were long-lasting in **II**, what fraction were also long-lasting in **III**?

A $\frac{4}{10}$
B $\frac{4}{13}$
C $\frac{10}{13}$
D $\frac{13}{16}$

25 At most, how many vegetables packed in **I** were long-lasting at each of the four storage temperatures?

A 1
B 6
C 10
D 18

UNIT 8

Questions 26 – 30

Groundwater is water that has seeped from the land surface into the ground. An **aquifer** is a body of permeable[1] rock or sediment that is saturated with groundwater. Groundwater can resurface, or discharge, at the land surface through natural springs and free-flowing bores. **Bores** are holes drilled into the ground to access groundwater.

Bores are dug into **confined aquifers** and **unconfined aquifers**. **Confined aquifers** lie, under enormous pressure, beneath a layer, or between layers, of impermeable or semi-permeable rock or clay. These layers, known as **confining beds**, effectively work as barriers. When an **artesian bore** is sunk, the pressure released can send the water shooting up to the land surface. Artesian pressure declines if many bores are dug in the aquifer and the water that flows freely from them is not capped. Water from bores dug in **unconfined aquifers** usually has to be pumped to the surface because it is not under artesian pressure.

A simplified aquifer system is shown below.

[1] *permeable*: water can filter through it

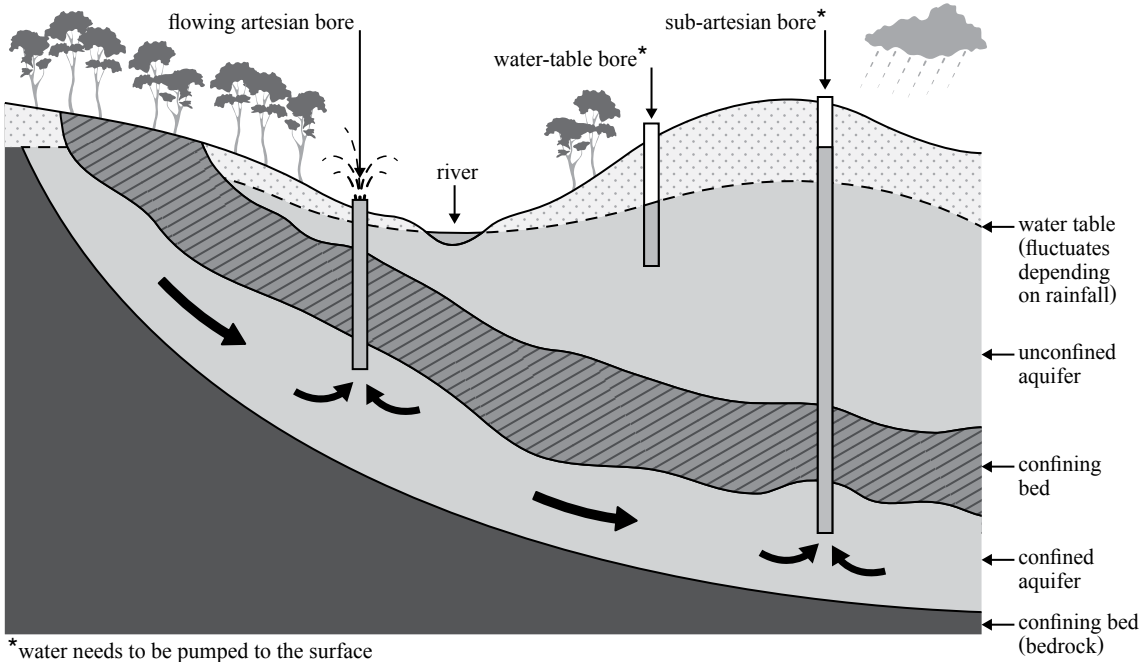


Figure 1: Simplified aquifer system

26 Based on Figure 1, the water table would most accurately be described as the

- **A** top of a confining bed.
- **B** top of an unconfined aquifer.
- **C** deepest level to which groundwater can seep.
- **D** level water reaches when released from confined aquifers.

27 According to Figure 1, when a bore is dug into a confined aquifer, the water always

- **A** discharges at the land surface.
- **B** moves into the aquifer above it.
- **C** rises above the confined aquifer.
- **D** rises to the level of the water table.

28 Based on Figure 1, a 'sub-artesian bore' is a bore

A that has run out of water.
B that draws water from an unconfined aquifer.
C from which groundwater cannot be extracted.
D in which artesian groundwater does not reach the land surface.

Figure 2, below, provides information about the discharge of water from **flowing artesian bores** dug in Australia's Great Artesian Basin (GAB) between 1880 and 1990. The GAB underlies about one-fifth of the Australian continent. The graph shows the total number of artesian bores that flowed when first drilled, and the number of those bores that still flow freely (the water does not need to be pumped to the surface).

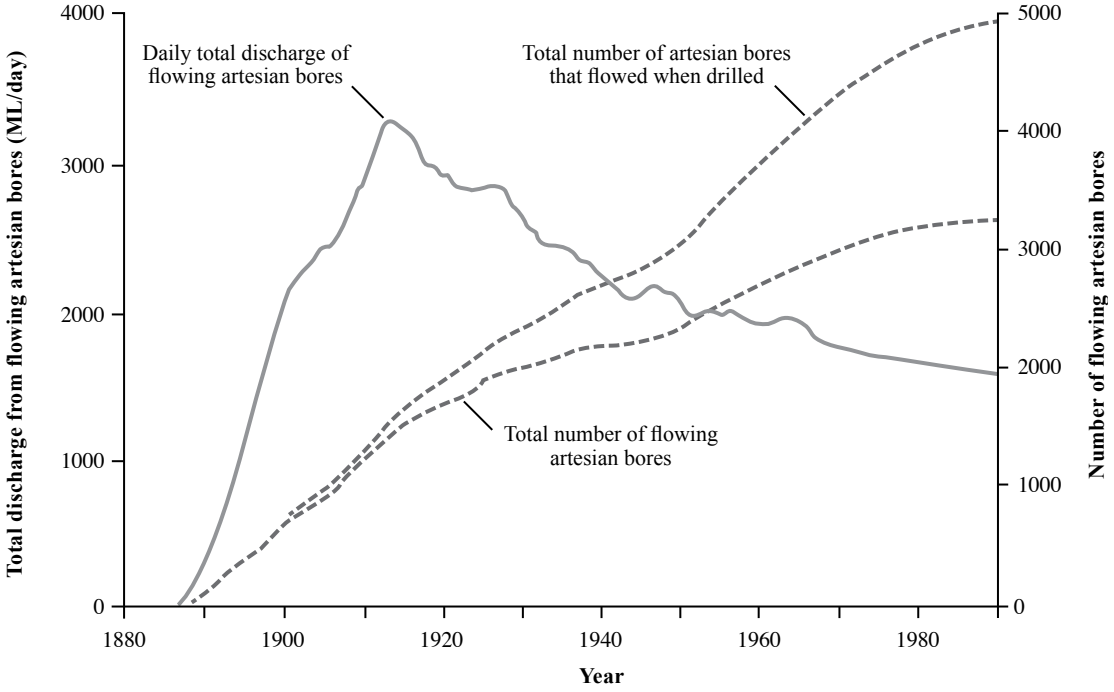


Figure 2: Flowing artesian bores dug in the GAB, 1880–1990

29 The total amount discharged by flowing artesian bores in the GAB in 1960 was approximately

A 1800 megalitres per day.
B 2200 megalitres per day.
C 2500 megalitres per day.
D 3000 megalitres per day.

30 Based on the trend apparent since 1970 in Figure 2, approximately how much water in total will artesian bores in the GAB discharge daily in 2020?

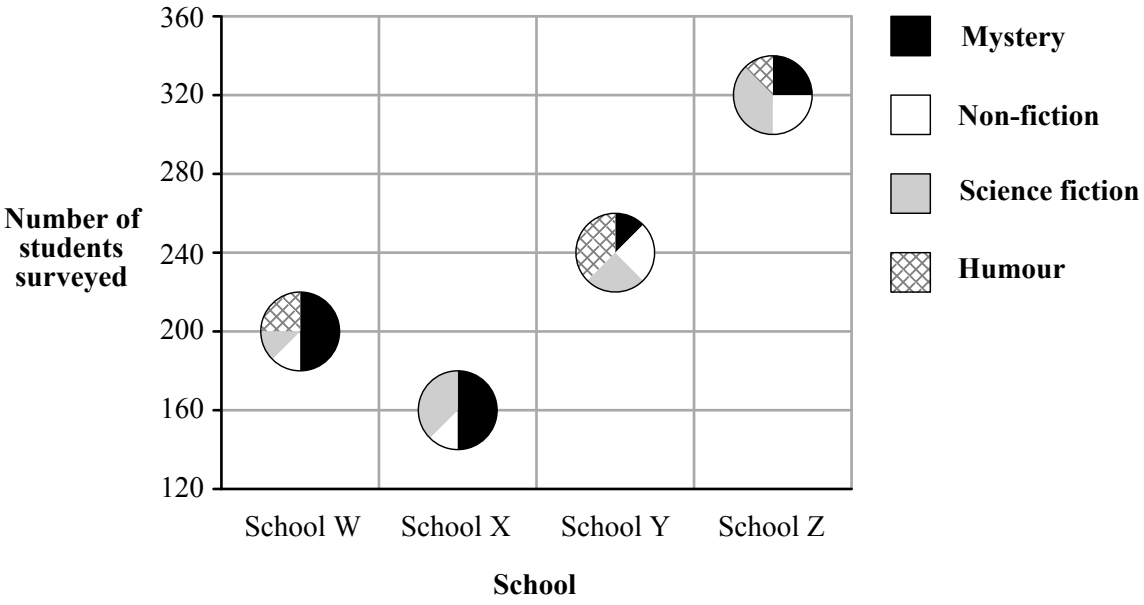
A 1500 megalitres per day
B 2000 megalitres per day
C 2500 megalitres per day
D 3200 megalitres per day

UNIT 9

Questions 31 – 34

Students at different schools (W, X, Y and Z) were surveyed about the type of book they prefer to read. The results of the survey are shown in the graph below.

For example, 200 students from School W were surveyed. Of these students, one-eighth (25 students) prefer to read non-fiction books.



31 At which two schools do the same number of students prefer to read science fiction books?

A School X and School Z
B School W and School X
C School X and School Y
D School W and School Z

32 What fraction of all students who prefer to read humour books come from School Y?

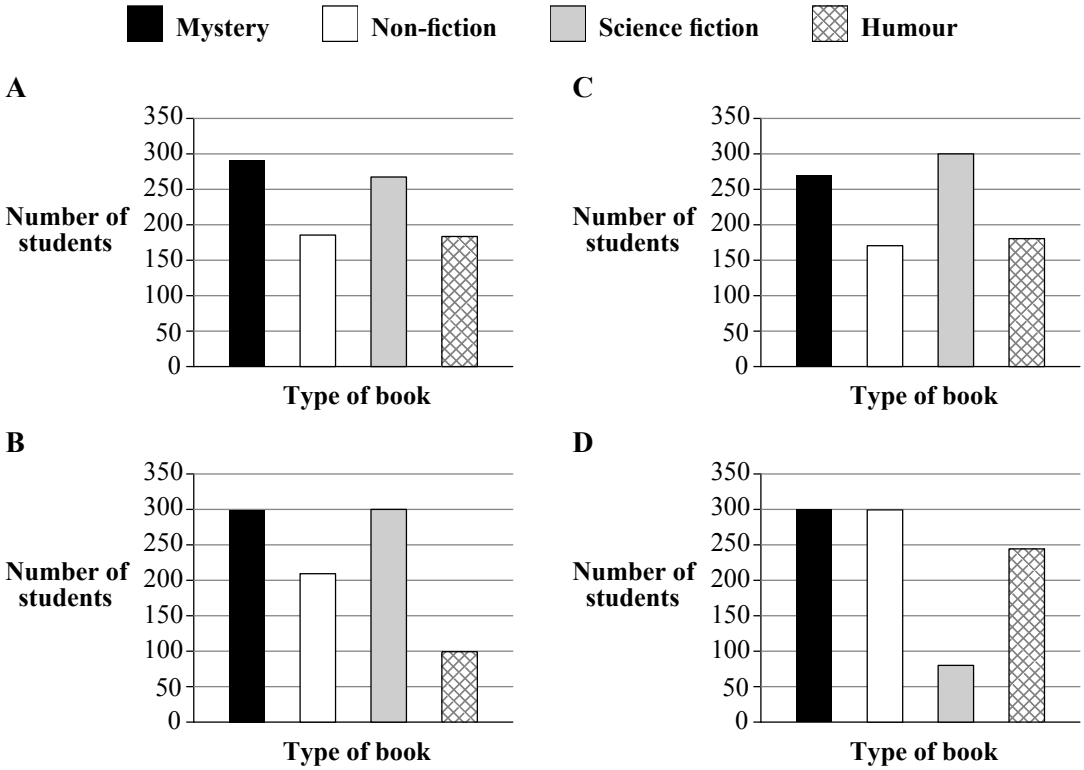
A $\frac{1}{4}$

B $\frac{3}{8}$

C $\frac{1}{3}$

D $\frac{1}{2}$

33 Which graph correctly shows the total number of students that prefer to read each type of book?



34 Another 320 students were surveyed at School V about their reading preferences. The survey showed that:

- the same number of students at School W and School V preferred to read mystery books
- a quarter of the students at School V preferred to read non-fiction books
- at School V an equal number of students preferred to read science fiction and humour books.

How many students at School V preferred to read humour books?

A 70
B 90
C 120
D 160

UNIT 10

Questions 35 – 38

I
Ostentation is the signal flag of hypocrisy.

II

III
An ostentatious man will rather relate a blunder or an absurdity he has committed, than be debarred from talking of his own dear person.

IV
As far as I'm concerned, I prefer silent vice to ostentatious virtue.

V
A taste for ostentation is rarely associated in the same souls with a taste for honesty.

VI
Moderation is an ostentatious proof of our strength of character.

35 In Quotation **I**, ostentation is viewed as a

A subtle form of hypocrisy.
B complement to hypocrisy.
C contradiction of hypocrisy.
D manifestation of hypocrisy.

36 Which of the following are most alike in meaning?

A **I** and **II**
B **I** and **V**
C **II** and **IV**
D **V** and **VI**

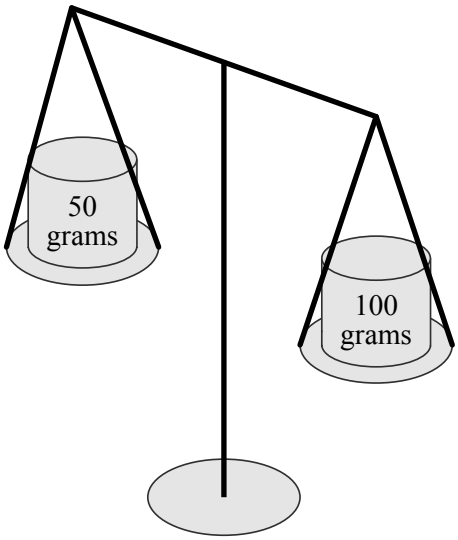
37 In the cartoon in **II**, the waitress presents ostentation as

A routine.
B appealing.
C embarrassing.
D reprehensible.

38 Which aspect of ostentation does Quotation **III** most strongly emphasise?

A vanity
B wealth
C vulgarity
D dishonesty

UNIT 11



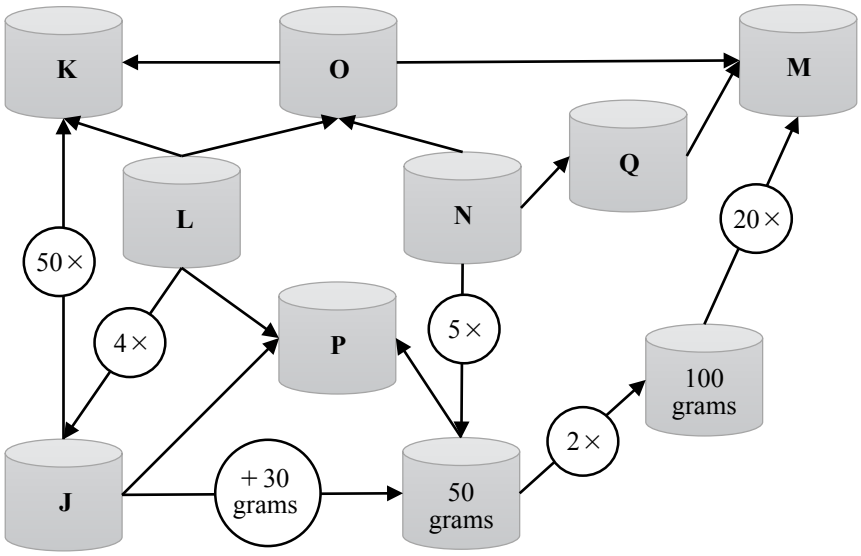
A balance

Questions 39 – 41

Sachi has an old set of weights. All the weights are the same size, but most of them have different masses. Two of the weights have known masses (50 grams and 100 grams); the masses of the others (**J** – **Q**) are unknown.

Sachi compares the masses of the weights on a balance. Some of the comparisons are shown in the diagram. The arrow between each pair of weights points to the heavier weight. The circles shown on some of the arrows provide additional information about the relative masses of certain pairs of weights.

For example, **K** is 50 times as heavy as **J**, and the 50 gram weight is 30 grams heavier than **J**.



39 Which of the following could **not** weigh the same as each other?

A **J** and **O**
B **L** and **Q**
C **O** and **P**
D **K** and **Q**

40 Which of **K** and **M** is heavier?

A **K**
B **M**
C **K** and **M** have the same mass.
D It is not possible to tell which is heavier.

41 Suppose that a weight, **R**, is half the mass of **O** and has arrows connecting it to **K**, **L**, **M** and **N**.

At most, how many of these arrows could point towards **R**?

A zero
B one
C two
D four

UNIT 12

Question 42

"That's the gist of what I want to say. Now get me some statistics to base it on."

42 Which of the following does the man seated at the desk value most?

A rigour
B authenticity
C appearances
D social connections

UNIT 13

Questions 43 – 45

In a particular sport, participants can compete in three events (**I**, **II** and **III**).

The number of points awarded to a participant in each event depends on:

- the finishing time of the participant (**T**, in seconds)
- the finishing time of the winner ($\mathbf{T_w}$, in seconds)
- a difficulty factor (**F**), which varies according to the event, as shown in the table.

Event	Difficulty factor
I	800
II	1200
III	1400

The formula for allocating points (**P**) to each participant in an event is:

$$\mathbf{P} = \frac{\mathbf{F(T - T_w)}}{\mathbf{T_w}}$$

43 Rani took 2000 seconds to complete event **II** and was awarded 300 points.

How many seconds did it take the winner to complete this event?

A 500
B 1600
C 2000
D 8000

44 The time difference between Amy and the winner was three times the time difference between Bec and the winner.

If $\mathbf{T_A}$ is the time Amy took and $\mathbf{T_B}$ is the time Bec took, which of the following is true?

A $3\mathbf{T_A} = \mathbf{T_B}$
B $3\mathbf{T_A} + \mathbf{T_B} = 2\mathbf{T_w}$
C $3\mathbf{T_B} - \mathbf{T_A} = 2\mathbf{T_w}$
D $3\mathbf{T_B} - \mathbf{T_A} = 4\mathbf{T_w}$

45 How many points would be awarded to a person who took twice as long as the winner in event **II**?

A 600
B 1200
C 1800
D 2400

UNIT 14

Questions 46 – 49

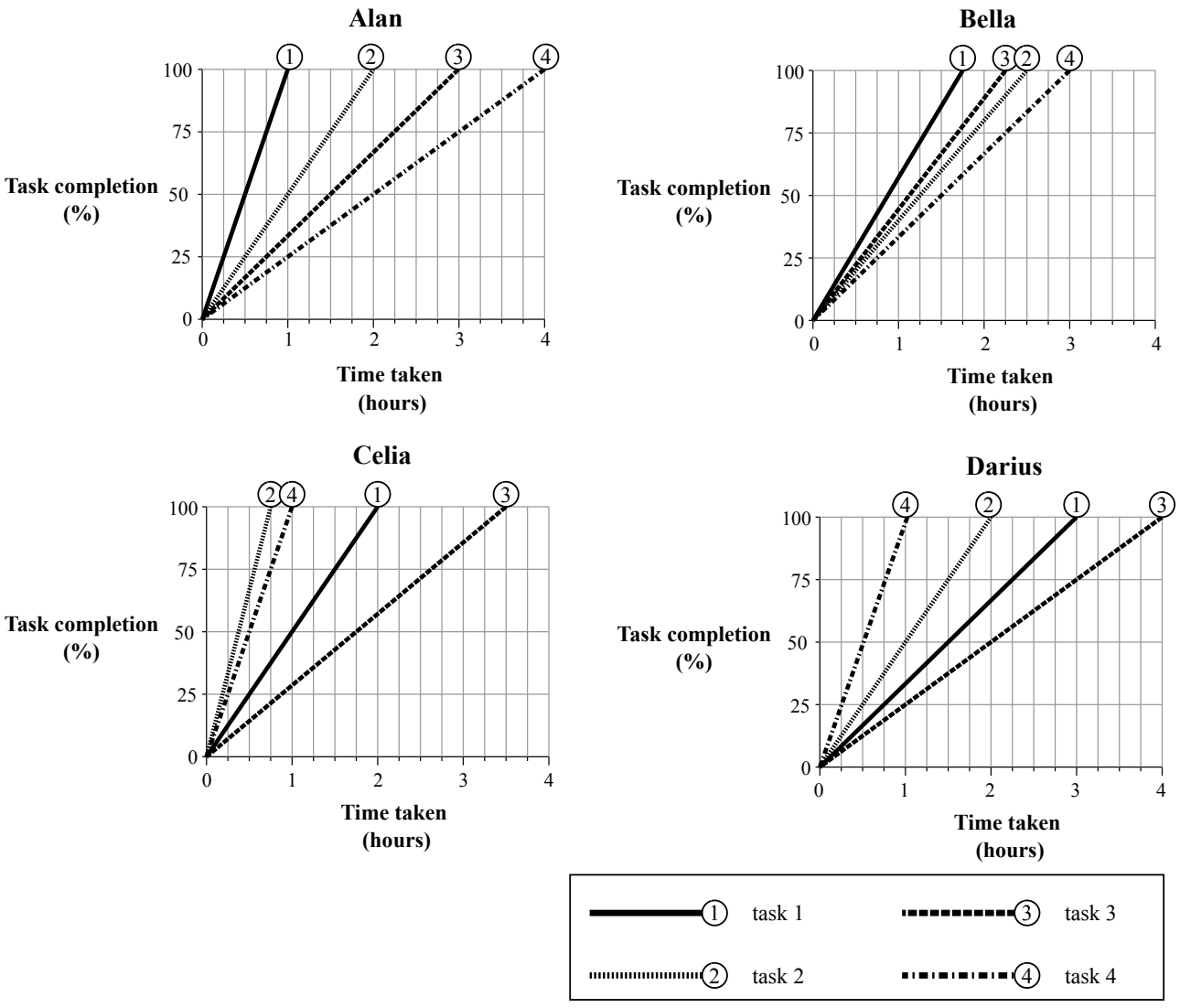
Four students (Alan, Bella, Celia and Darius) have been given an assignment to complete as a group.

The assignment involves four tasks that need to be completed in order (Task 1 before Task 2, Task 2 before Task 3 and Task 3 before Task 4).

The students all have different skill sets, so each student will be able to complete some tasks more quickly than others can. To determine the quickest way to complete the whole assignment, each student estimated how long it would take them to complete each task on their own. Their estimates are shown in the four graphs below.

For example, Alan estimated that he could complete 75% of Task 4 in three hours and the whole task in four hours. Bella estimated that it would take her three hours to complete Task 4.

Time estimated to complete tasks



46 Which student estimated that they could complete the whole assignment, on their own, in the shortest time?

A Alan
B Bella
C Celia
D Darius

47 Suppose each student completes one task and Bella completes Task 1.

What is the estimated minimum time to complete the assignment?

A 4 hours
B 5 hours and 30 minutes
C 6 hours and 30 minutes
D 7 hours and 15 minutes

48 Suppose the four students split into groups of two.

Celia and Darius work together and decide to do two tasks each.

Based on their estimates, which two tasks should Darius do in order to complete the assignment as quickly as possible?

A Tasks 1 and 2
B Tasks 2 and 3
C Tasks 3 and 4
D Tasks 2 and 4

49 Suppose the four students split into groups of two, and each student completes two tasks.

Based on their estimates, which pair of students would complete the assignment most quickly?

A Alan and Bella
B Alan and Celia
C Darius and Bella
D Darius and Celia

UNIT 15

Questions 50 – 53

The following information is about an American legal case over whether a deed granting rights to 'minerals' beneath a property in Pennsylvania entitled the deed-holders to gas as well. The property sits above a shale-rock formation. Commercial drilling for the gas trapped within the formation began in 2008. There are now nearly 9000 shale-gas wells in the state of Pennsylvania.

1 John and Mary Butler owned a property in Pennsylvania, which their predecessors had acquired from Charles Powers in 1881. In 2009, the Butlers went to court to 'quiet' a right specified in their 1881 deed of ownership that entitled Charles Powers's heirs to 'one half the minerals and petroleum oils' beneath the property. No heir had ever exercised the right.

2 After they were located, Charles Powers's heirs opposed the Butlers' action, claiming that their right under the deed should entitle them to half of any gas extracted from the shale (a mineral) beneath the Butlers' property.

3 The court dismissed the heirs' claim. The court relied on the precedent set by ***Dunham v. Kirkpatrick*** (1882) in the Pennsylvania Supreme Court. Under the 'Dunham Rule', a deed reserving 'minerals' does not include rights to oil or gas unless these terms are specifically mentioned.

4 Charles Powers's heirs appealed to a superior court, arguing that courts in other US states treated 'mineral' rights as including oil and gas.

They also pointed to a 1983 Pennsylvania Supreme Court judgement in ***US Steel Corp v. Hoge***, which found that whoever owned the coal owned the gas within it. The deed held by US Steel specified its rights to coal. The heirs believed that this judgement supported their claim: if they half-owned the minerals (shale) beneath the Butlers' property, they also half-owned the gas in it.

The superior court ordered that the case return to the lower court for it to consider the heirs' new arguments.

5 The Butlers immediately appealed to the Pennsylvania Supreme Court against the superior court's decision. In 2013, the Supreme Court ruled in their favour by upholding the Dunham Rule. In the court's judgement, one judge wrote: 'I find the original rationale for the Dunham Rule to be cryptic, conclusory and highly debatable. Nevertheless, since Dunham has effectively served to establish a governing rule of property law in Pennsylvania for over a century, too many settled expectations rest upon it for the courts to upset it retroactively.'

50 John and Mary Butler sought to 'quiet' a right specified in their deed of land ownership (Box 1).

By doing this they wanted to

A acquire the right.
B override the right.
C apply the right.
D confirm the right.

51 In contrast with the outcome of the *Butler v. Charles Powers* case, US Steel Corps's bid to secure rights to coal gas succeeded because its

A deed was more specific.
B deed defined coal as a mineral.
C case was not relevant to the Dunham Rule.
D case was heard in another legal jurisdiction.

52 In context, how would Charles Powers's heirs have most likely reacted to the decision of the superior court (Box 4)?

A They would have considered it a demoralising setback.
B They would have felt encouraged about the strength of their arguments.
C They would have been elated by the court's acceptance of their arguments.
D They would not have been surprised given the patently flawed decision of the lower court.

53 The judge's comment in Box 5 indicates that the Pennsylvania Supreme Court

A would soon overturn the Dunham Rule.
B did not have the power to reject the Dunham Rule.
C had the power but not the will to overturn the Dunham Rule.
D believed that the reasoning behind the Dunham Rule was sound.

UNIT 16

Questions 54 – 56

'Who controls the past controls the future. Who controls the present controls the past.'

George Orwell

54 The quotation suggests that history

A is a factual account of past events.
B has little impact upon events in the present.
C can be used to manipulate the way people think.
D has control over the way people lived in the past.

55 Orwell appears to think that

A history is free from bias.
B history can be used as propaganda.
C history is a factual account of the past.
D the past has little impact on the present.

56 Orwell appears to consider the writing of history as

A benign.
B factual.
C dangerous.
D insignificant.

UNIT 17

Questions 57 and 58

Civilities

The delicate corner shot,
Slicing the strings precise across the ball
At the right time, so that it lightly hits
On one side wall,
Kisses the front, then falls
Quick-dying down, most irretrievable,

Is difficult to do
Unless a calm, an inner certainty
Comes to you softly in the midst of war,
Setting you free
From the slam-bang desire
To smash it hard no matter where. To be

So deftly sure, so wise
Wins points in squash. In another, harder game,
Word-play, a similar civility
May equally tame
Peaceless desires, and make
Your opponent yours by a nicety of name.

Thomas Whitbread

57 The poem as a whole suggests that a 'delicate corner shot' is 'difficult to do' (lines 1–7) because it

A is unsportsmanlike.
B can often work against you.
C requires great technical skill.
D requires great presence of mind.

58 The poem mostly advocates

A trust.
B restraint.
C tolerance.
D self-belief.

UNIT 18

Questions 59 – 62

Barry is in charge of buying kitchen supplies for his office. Due to limited supply, Barry had to buy rolls of paper towel from three separate online suppliers: **My Ply**, **Dry More** and **Wipeoff**. He bought three different types of paper towel (1-ply, 2-ply and 3-ply) from each of the suppliers.

Figure 1 shows the proportion (in black) of all paper-towel rolls bought by Barry from each supplier. For example, he bought half of all his paper-towel rolls from **My Ply**.

Figure 2 shows, for each supplier, the proportion (in black) of paper-towel rolls that Barry bought that were 1-ply and 2-ply. The proportions for 3-ply are missing and marked with '?'. For example, one-quarter of the paper-towel rolls bought from **My Ply** were 1-ply and one-quarter were 2-ply; the remainder were 3-ply.

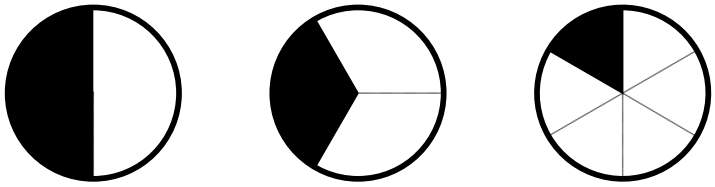


Figure 1: Proportion (in black) of all paper-towel rolls bought, by supplier

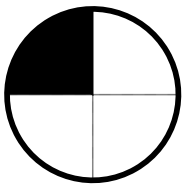
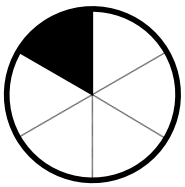
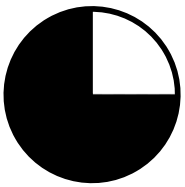
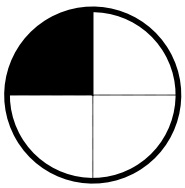
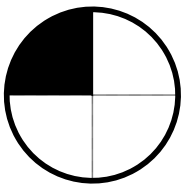
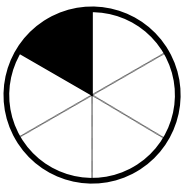
Roll type	My Ply	Dry More	Wipeoff
1-ply			
2-ply			
3-ply	?	?	?

Figure 2: Proportion (in black) of paper-towel rolls bought from each supplier, by paper type

59 If Barry bought a total 144 rolls of paper towel, how many rolls of 2-ply did he buy from **Dry More**?

A 12
B 18
C 36
D 108

60 Which of the following statements is correct?

I Barry bought twice as much 1-ply from **Dry More** as 2-ply from **Wipeoff**.
II Barry bought the same amount of 2-ply from **Wipeoff** as 1-ply from **My Ply**.

A **I** only
B **II** only
C both **I** and **II**
D neither **I** nor **II**

61 If Barry bought six rolls of 3-ply paper towel from **Wipeoff**, how many paper-towel rolls did he buy in total from all three suppliers?

A 72
B 180
C 216
D 432

62 If the number of 2-ply rolls bought at **Dry More** is x, which of the following gives the number of rolls of 1-ply bought at **Wipeoff**?

A $\frac{x}{2}$

B $\frac{3x}{4}$

C $\frac{3x}{2}$

D $2x$

UNIT 19

Questions 63 – 66

The following passage is from an article in which the author recounts his interest in ports and shipping. A merchant navy is a country's fleet of vessels that carry goods for trade.

On the whole I am thankful I never sought my living on the high seas, and especially not in the British merchant navy which over a few decades has shrunk from dominating the world to impersonating a ghost. I am glad to have taken my chance once, back in the Sixties, when I hitched a lift on a Hapag-Lloyd cargo ship, the *Hilde Mittmann* out of Hamburg, and worked my passage up the Amazon to Manaos[1] by scrubbing down the engine room bulkheads. I fear this sort of casual travel would be almost impossible these days, what with unionised crewing and the security regulations of marine insurance companies. That, too, tarnishes some of the sea's romantic gleam. I am snobbishly out of tune with the idea of cruise ships, floating pleasure palaces of hideous and unnautical design, which may nonetheless restore the fortunes of the world's more photogenic ports. They roll down to Rio, all right, though not much up to Calcutta or Vladivostok. Anyway, cruising is not the same as travel, which no matter how dreamily undertaken is nevertheless full of intent. The whole point of cruising seems to be that of distraction: of diverting attention at all times away from anything as humdrum as a journey and on to bars, restaurants, casinos, saunas, gyms, discos and the other beguilements of city life, until there is no obvious reason for being afloat.

One of the reasons I like to return to the village beside the South China Sea that I have known for over 20 years is because it enables me still to fight my way on and off decrepit inter-island vessels in ports that Conrad[2] would recognise. Another is that it holds echoes of an old order. This is no colonialist nostalgia but a purely maritime one. At dusk it is possible to glimpse silent youths sitting on the beach staring pensively towards the last gaudy rags of a tropical sunset. I do not have to invent a wistful look in their eyes. From daily conversation it is obvious they are rehearsing the fabulous possibilities that surely await them as soon as they are old enough and qualified enough to set sail from their impoverished archipelago and go adventuring at large on the oceans of the world. As Filipinos they will be joining the greatest single diaspora[3] of merchant seamen, so their dreams are by no means pure fantasy.

[1] *Manaos*: a city in northern Brazil
[2] *Conrad*: Joseph Conrad, a Polish-British writer (1857–1924) whose fiction was influenced by his experiences as a merchant sailor
[3] *diaspora*: a group that has been dispersed outside its traditional homeland

63 On the subject of cruise ships (lines 9–12), the author

A is mostly negative.
B has nothing positive to say.
C exaggerates for comic effect.
D acknowledges that he is of the wrong generation to judge them.

64 When the author describes cruise ships as being of an ‘unnautical design’ (line 10), he suggests that they

A are unsafe.
B should be sailing ships.
C are excessively luxurious.
D are lumbering and graceless.

65 In lines 12 and 13 the author argues that travel differs from cruising in that travel

A is more relaxing.
B requires much more stamina.
C demands resolve and purpose.
D requires an element of hardship.

66 The description of the Filipino youths (lines 22–29) suggests that the author

A pities their naivety.
B resents their freedom.
C identifies with their longing.
D is impressed by their bravery.

UNIT 20

Question 67

> Personal beauty is a better introduction than any letter.
>
> *attributed to Diogenes Laërtius, c. 200 CE*

67 The quotation suggests that personal beauty

A is illusory.
B is short-lived.
C conceals the truth.
D transcends character.

UNIT 21

Questions 68 – 70

Below is an image of a painting by Claude Monet (1840–1926).

Woman with a Parasol – Madame Monet and Her Son (1875)

68 The scene captured in the painting is best described as

A fleeting and candid.
B distorted and disorienting.
C contrived and artificial.
D formal and conventional.

69 The painting creates for the viewer a sense of having

A interrupted a private moment.
B unveiled a moment of delight.
C stumbled upon a tense moment.
D uncovered a moment of sadness.

Below is an image of a painting by Charles Courtney Curran (1861–1942).

Among the Laurel Blossoms (1914)

70 In contrast to Monet's painting, the relationship between the subject in Curran's painting and the viewer is

A more intense.
B less superficial.
C less demanding.
D more confronting.

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