

SAMPLE

BIOLOGY

Sample Assessment Paper for Admission to Grade X

MCQs:

[5marks]

1. Which chamber of the heart has the thickest walls?

- A left atrium
- B left ventricle
- C right atrium
- D right ventricle

2. Which statement explains why humans are said to have a double circulation?

- A As blood circulates it passes twice through the heart.
- B Each side of the heart has two chambers.
- C Each side of the heart has two valves.
- D There are two different sets of arteries leaving the heart.

3. Which processes are responsible for the uptake of ions from the soil by a plant and the uptake of glucose into the villi of a human?

- A Reverse Osmosis
- B Osmosis
- C Diffusion
- D Active Transport

4. What is found in both animal and plant cells?

- A cellulose cell wall
- B chloroplast
- C starch grain
- D vacuole or vacuoles

5. Which process keeps conditions such as temperature and glucose concentration constant inside the body?

- A Excretion
- B Homeostasis
- C Secretion
- D Vasodilation.

Theory:

[15 marks]

1. Four of the stages associated with human nutrition are:

Absorption digestion egestion ingestion

a) (i) State the stage in nutrition that has not been included in the list above.

.....
..... [1]

Fig. 2.1 shows the human alimentary canal.

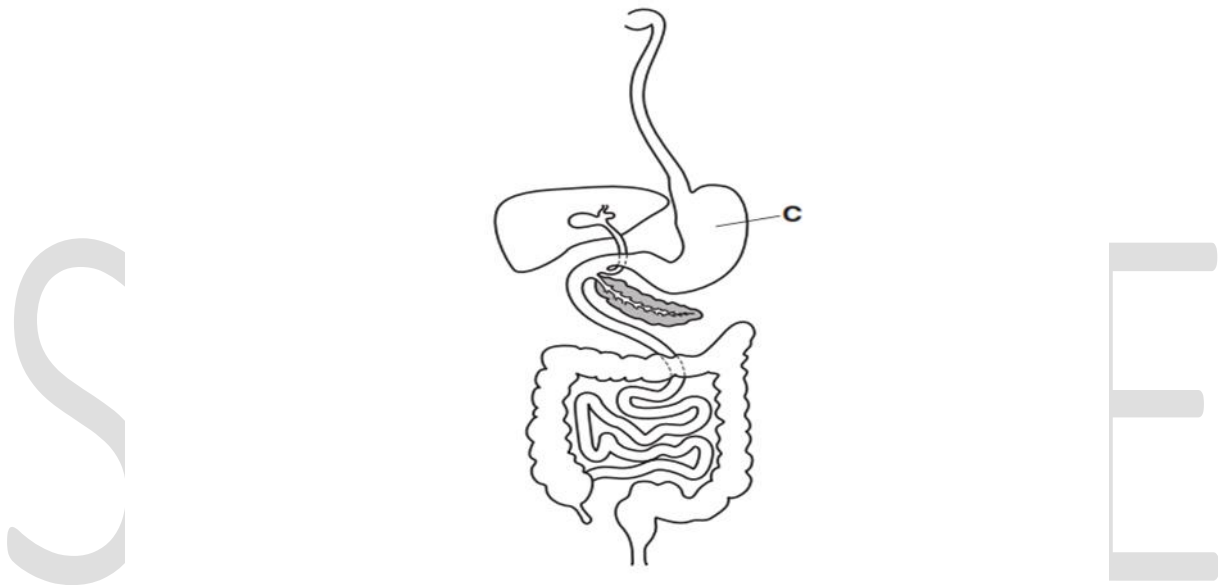


Fig. 2.1

(ii) On Fig. 2.1, use lines labelled A and B to indicate where egestion (A) and ingestion are then absorbed into the blood. [2]

(b) State a component of the diet that is digested in region C and in fig 2.1 and, where the products are then absorbed in to the blood.

Component

Where products absorbed..... [2]

ATP:

[5marks]

3. Fig. 3.1 shows some cells seen under a microscope.

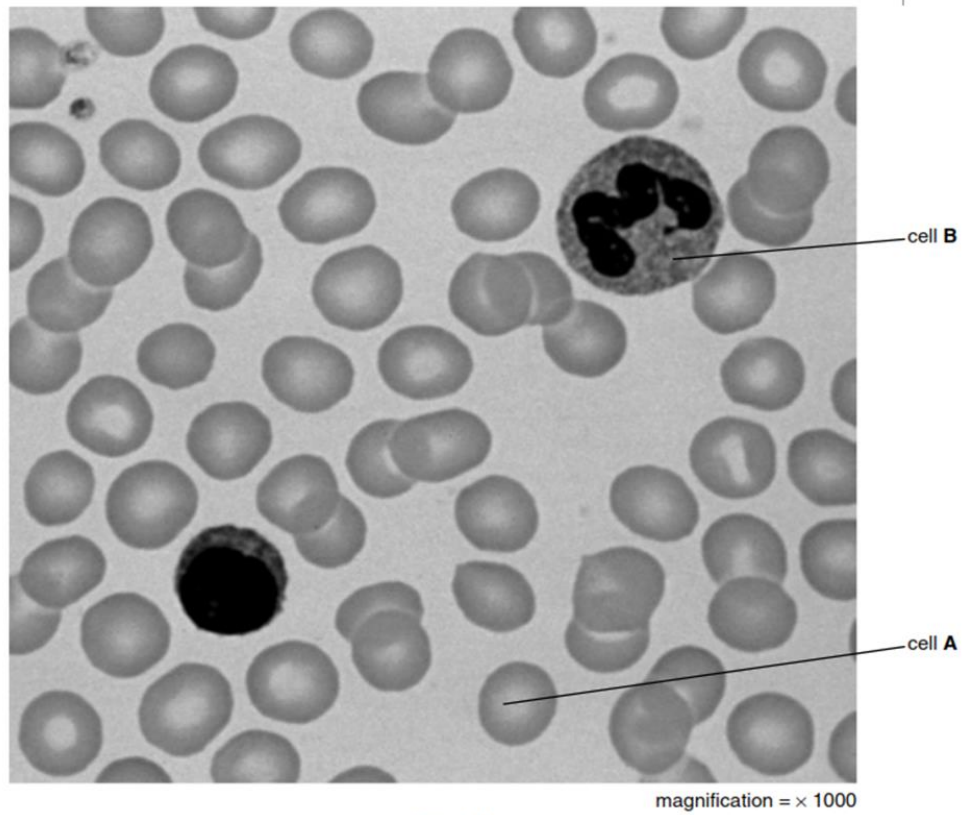


Fig. 3.1

(a) In the space below, make a large, labelled drawing of cell B.

[3]

(b) Calculate the magnification of your drawing compared to the actual size of cell B on the slide that was photographed to make Fig. 3.1, using these measurements.

Show your working clearly.

Magnification

[2]

SAMPLE

CHEMISTRY

Sample Assessment Paper for Admission to Grade X

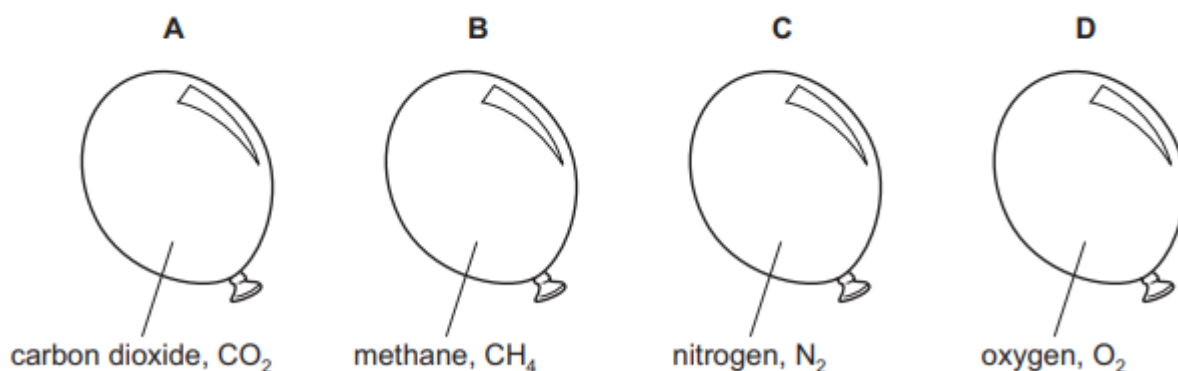
MCQs

[4]

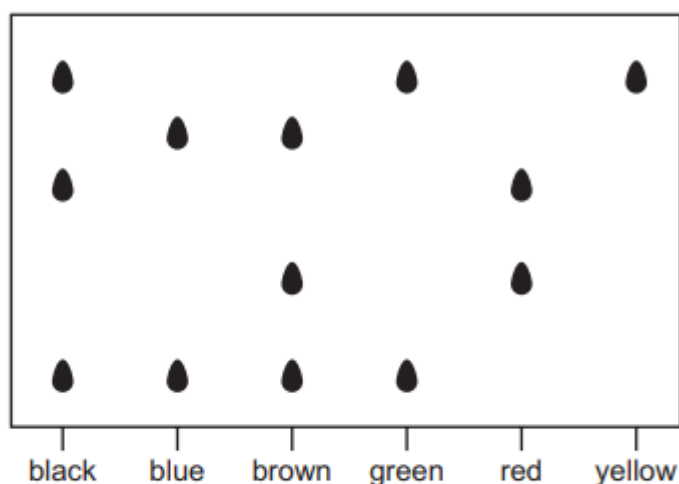
- 1 An inflated balloon goes down because gas molecules can diffuse through the rubber.

Four balloons are filled with different gases at the same temperature and pressure.

Which balloon would go down quickest?



- 2 The diagram shows a chromatogram of several inks.

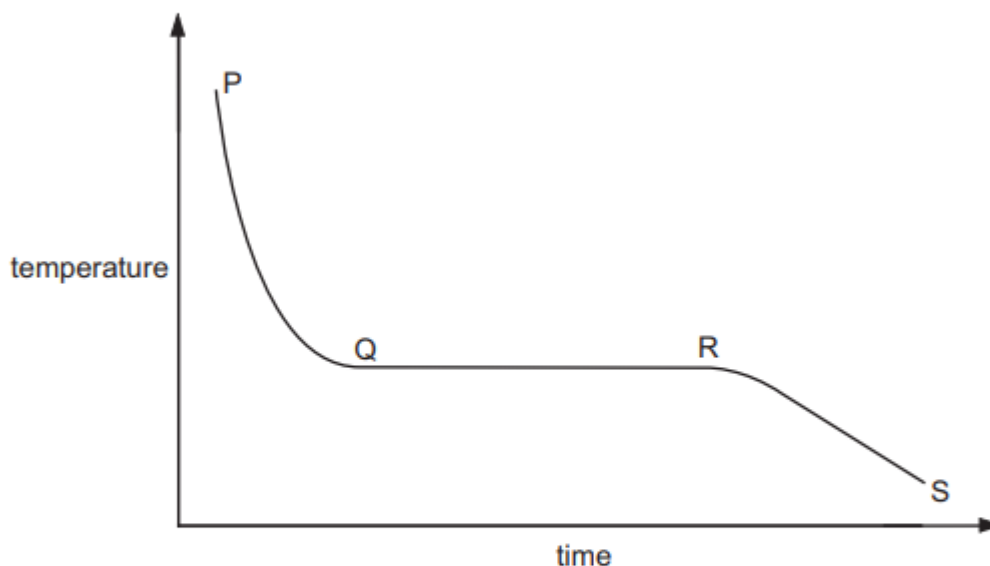


Which statement is correct?

- A Black ink can be made by mixing green, red and yellow inks.
- B Brown ink can be made by mixing blue and red inks.
- C Yellow ink can be used to make brown ink.
- D Yellow ink may be present in green ink.

- 3 A sample of a pure compound is heated until it is completely molten and the compound is then allowed to cool until it is completely solid again.

The graph shows how the temperature of the compound changes with time.



When are liquid and solid both present?

- A P to Q and R to S
 - B P to Q
 - C Q to R
 - D R to S
- 4 Which statement about all the noble gases is correct?
- A The number of protons in the atoms equals the number of neutrons.
 - B Their atoms each have a stable arrangement of electrons.
 - C Their atoms each have eight electrons in their outer shell.
 - D They exist as molecules containing two atoms.

THEORY

[7]

Q1

A3 A student found a copy of a Periodic Table published in the year 1930. Several elements were missing from this table because they had not yet been discovered. One of these elements was technetium, Tc.

One isotope of technetium has the symbol ${}^{98}_{43}\text{Tc}$.

(a) Complete the table below to show the number of subatomic particles in one atom of this isotope.

number of protons	
number of electrons	
number of neutrons	

[2]

(b) Suggest the symbol of another isotope of technetium.

..... [1]

(c) Explain, in terms of subatomic particles and their charge, why an atom of ${}^{98}_{43}\text{Tc}$ is electrically neutral.

.....
.....
..... [2]

(d) From its position in the modern Periodic Table predict two properties of technetium.

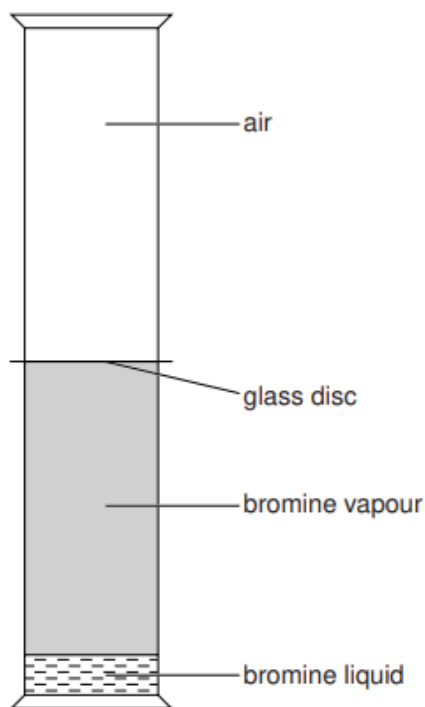
1
2 [2]

ATP

[4]

Q1.

2 A student does an experiment as shown in the diagram below.



(a) What colour is bromine vapour?

.....

[1]



(b) He carefully removes the glass disc to allow the contents to mix.

(i) What change, if any, is seen in the apparatus immediately after the disc is removed?

.....[1]

(ii) Describe the appearance of the contents of the gas jars after a few minutes.

.....[1]

(iii) Name the process taking place in the apparatus.

.....

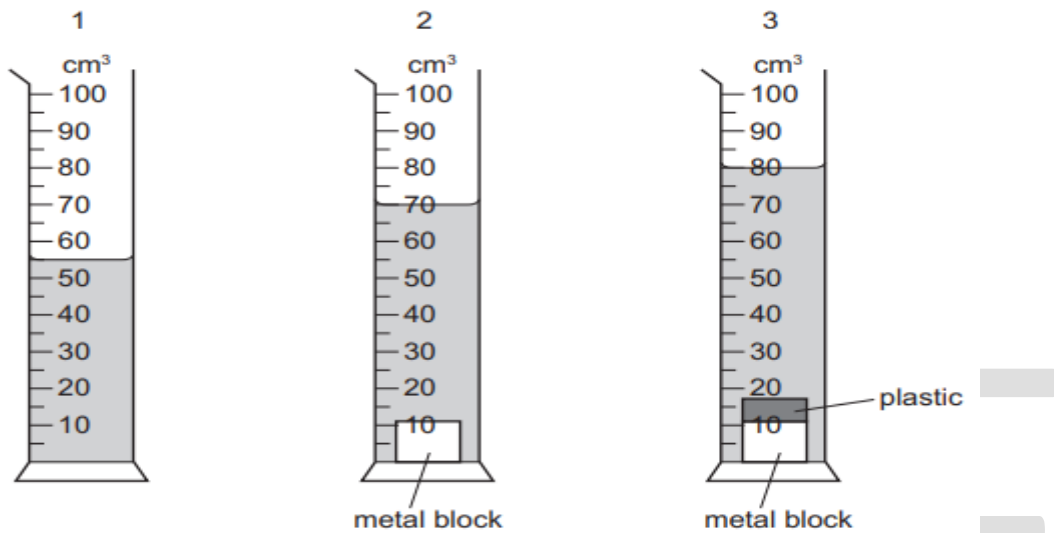
[1]

PHYSICS

Sample Assessment Paper for Admission to Grade X

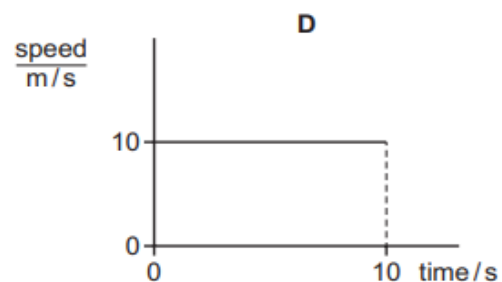
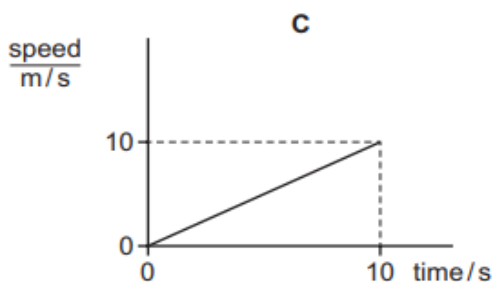
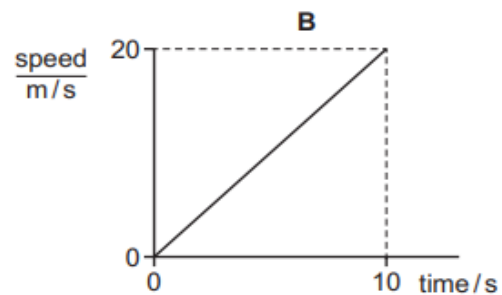
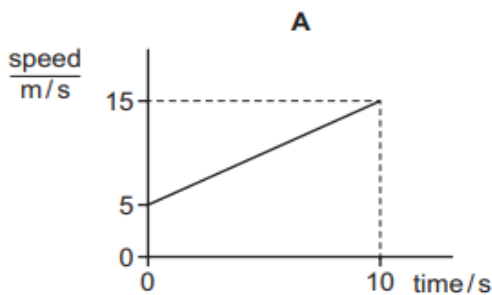
Multiple Choice Questions:

- 1 A measuring cylinder contains some water. A small metal block is slowly lowered into the water and is then removed. Finally a piece of plastic is attached to the metal block and the block is again slowly lowered into the water. The diagrams show the measuring cylinder at each stage of this process.

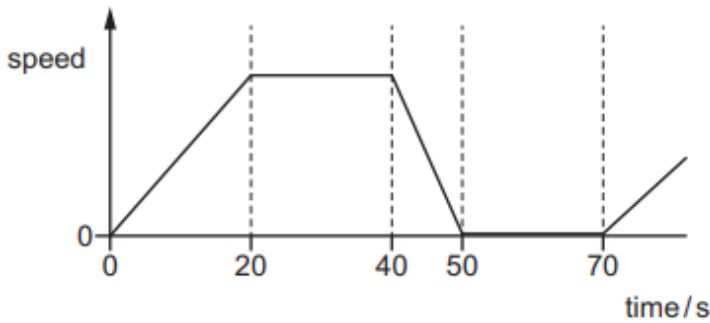


What is the volume of the piece of plastic?

- A 10 cm³ B 25 cm³ C 70 cm³ D 80 cm³
- 2 A car accelerates from rest and travels a distance of 100 m in 10 seconds. Which speed-time graph represents the motion of this car?



3 The diagram is the speed-time graph for a bicycle journey.



When is the bicycle moving at a constant speed?

- A between 0 and 20 s
- B between 20s and 40s
- C between 40s and 50s
- D between 50s and 70s

4 What is needed to determine the density of a regularly shaped block?

- A a balance and a beaker
- B a balance and a ruler
- C a measuring cylinder and a beaker
- D a measuring cylinder and a ruler

5 A cart experiences a forward force of 500N.

The cart also experiences a backward force of 200 N.

There are no other forward or backward forces on the cart.

What is the resultant force on the cart?

- A 300N backwards
- B 300N forwards
- C 700N backwards
- D 700N forwards

Note: Please fill answer grid for MCQ

Questions	Answer			
1.	A	B	C	D
2.	A	B	C	D
3.	A	B	C	D
4.	A	B	C	D
5.	A	B	C	D

STRUCTURED QUESTIONS:

1 (a) Nuclear power stations generate electricity.

Which of these statements describe an advantage of using nuclear power stations, and which of them describe a disadvantage?

Put a tick (✓) in the correct column for each statement. The first one is done for you.

statement	advantage	disadvantage
nuclear power stations require high levels of security		✓
nuclear power stations produce small amounts of carbon dioxide		
nuclear power stations have a small effect on climate change		
waste radioactive material can take a very long time to decay		

[3]

[Total: 3]

SAMPLE

2 Fig. 2.1 shows a speed-time graph for a ship starting to move.

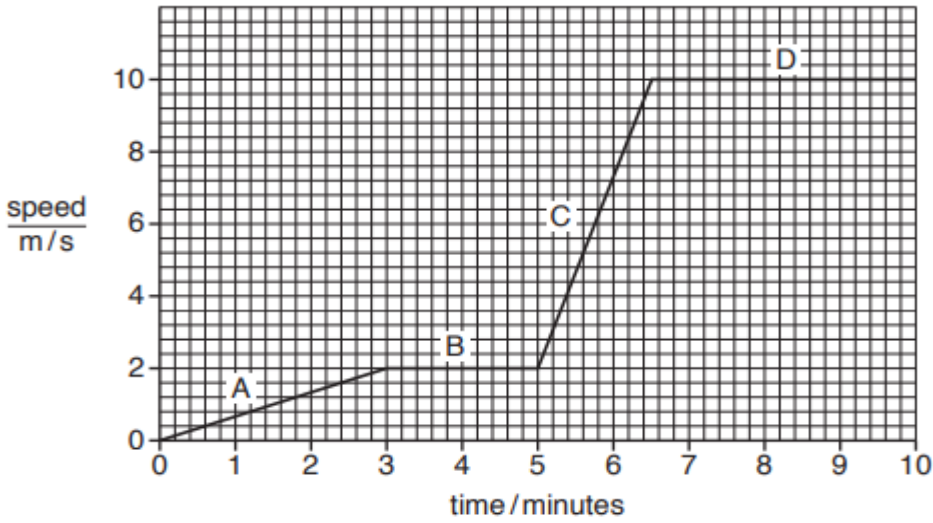


Fig. 2.1

(a) Describe the motion of the ship during each section of the graph.

- A
-
- B
-
- C
-
- D
- [4]

(b) Determine the distance travelled by the ship in section B of the graph.

distance = m [3]

[Total: 7]

3 Fig. 3.1 shows a glass vase used for displaying flowers.



Fig. 3.1

(a) The mass of the glass is 450 g. The volume of glass in the vase is 145 cm³.

(i) Calculate the density of the glass.

density = g / cm³ [2]

(ii) Calculate the weight of the glass

weight = N [1]

(b) Another vase has a weight of 30 N. The area of the base in contact with a table is 80.0 cm². Calculate the pressure this vase exerts on the table.

pressure = N / cm² [2]

[Total: 5]

MATHEMATICS

Sample Assessment Paper for Admission to Grade X

ELECTRONIC CALCULATORS MUST NOT BE USED IN THIS PAPER

1 Work out.

(a) $\frac{2}{3} + \frac{1}{6}$

..... [1]

(b) 0.4×0.2

..... [1]

2 Asha asks a group of students about their favourite fruit. The table and pictogram show some of the results.

Fruit	Apple	Banana	Orange	Melon
Frequency	8		5	

Apple	
Banana	○ ○ ○
Orange	
Melon	○ ◐

Key: ○ represents 4 people

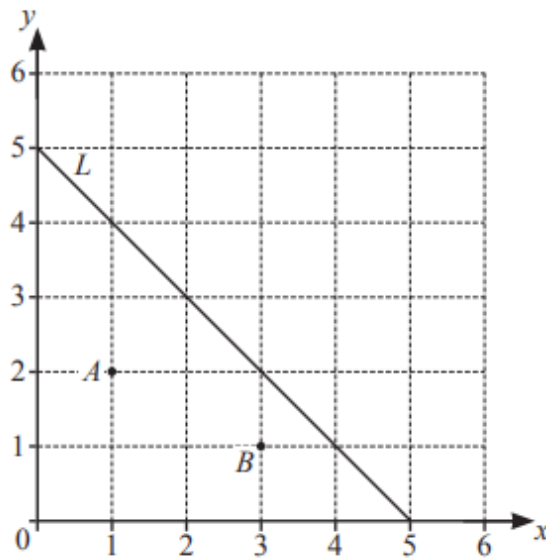
(a) Complete the table and pictogram.

[3]

(b) Write down the mode.

..... [1]

3



A and *B* are vertices of a quadrilateral.
 Line *L* is the line of symmetry of the quadrilateral.

Find the coordinates of the other two vertices of the quadrilateral.

(.....,) and (.....,) [2]

- 4 (a) The temperature inside Luke's house is 18°C .
 The temperature outside his house is -3°C .

Find the difference between these temperatures.

..... $^{\circ}\text{C}$ [1]

- (b) Luke's thermometer measures the temperature correct to the nearest degree.
 At midnight, the thermometer measures the temperature outside as -6°C .

Find the upper bound of the temperature outside at midnight.

..... $^{\circ}\text{C}$ [1]

- 5 A bag contains red balls, blue balls and green balls.
The ratio red : blue = 3 : 8 .
The ratio green : blue = 2 : 5 .

Work out the fraction of the balls that are blue.

..... [3]
[2]

- 6 Kabir invests \$250 in a savings account.
The account pays simple interest at a rate of 1.5% per year.

Calculate the total amount of interest he will receive at the end of 4 years.

\$ [2]

7



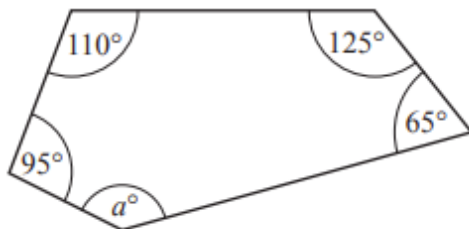
NOT TO
SCALE

The area of the rectangle is 9 cm^2 .
The area of the triangle is 85 mm^2 .

Calculate the shaded area.
Give your answer in cm^2 .

..... cm^2 [2]

8



NOT TO
SCALE

The diagram shows a pentagon.

Find the value of a .

$a =$ [3]

9 Shani makes a sequence of patterns using counters.



Pattern 1



Pattern 2



Pattern 3

(a) Complete the table.

Pattern number	1	2	3	4	5
Number of counters	5	8	11		

[1]

(b) Find an expression, in terms of n , for the number of counters in Pattern n .

..... [2]

(c) Shani has 100 counters.
 She uses some of the counters to make Pattern 20.
 She uses all the remaining counters to make Pattern k .

Find the value of k .

$k =$ [3]

10

(a) Factorise $4x^2 + 5x - 6$.

..... [2]

(b) Simplify $\left(\frac{16}{x^6}\right)^{-\frac{1}{2}}$.

..... [2]

11

(a) Solve $\frac{2-5x}{3x+10} = 3$.

$x =$ [3]

(b) Express as a single fraction in its simplest form $\frac{3}{x-2} - \frac{5}{2x+1}$.

..... [3]

URDU

Sample Assessment Paper for Admission to Grade X

جماعت: دہم

وقت: ۲۵ منٹ

نمبر: ۱۵

نام: _____

منظم معاشرتی زندگی کے لیے ٹریفک کے قوانین کی پابندی ضروری ہے۔

ہدایات:

- ۱۔ درج بالا عنوان پر کم از کم ۲۰۔۔۔ طور پر مشتمل مضمون لکھیے۔
- ۲۔ مضمون لکھنے سے پیشتر نکات لکھیے۔
- ۳۔ اس سوال کے لیے تحریری اظہار کے ۸ نمبر اور زبان و بیان کے ۷ نمبر ہیں۔

عنوان:

نکات:
