KĀSIGA SCHOOL

DEHRADUN

Holiday Homework Summer Break 2020

IGCSE Year 2

ENGLISH

Cambridge IGCSE®

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

FIRST LANGUAGE ENGLISH   **0500/02**

Paper 2 Directed Writing and Composition   **For examination from 2020**

SPECIMEN PAPER   **2 hours**

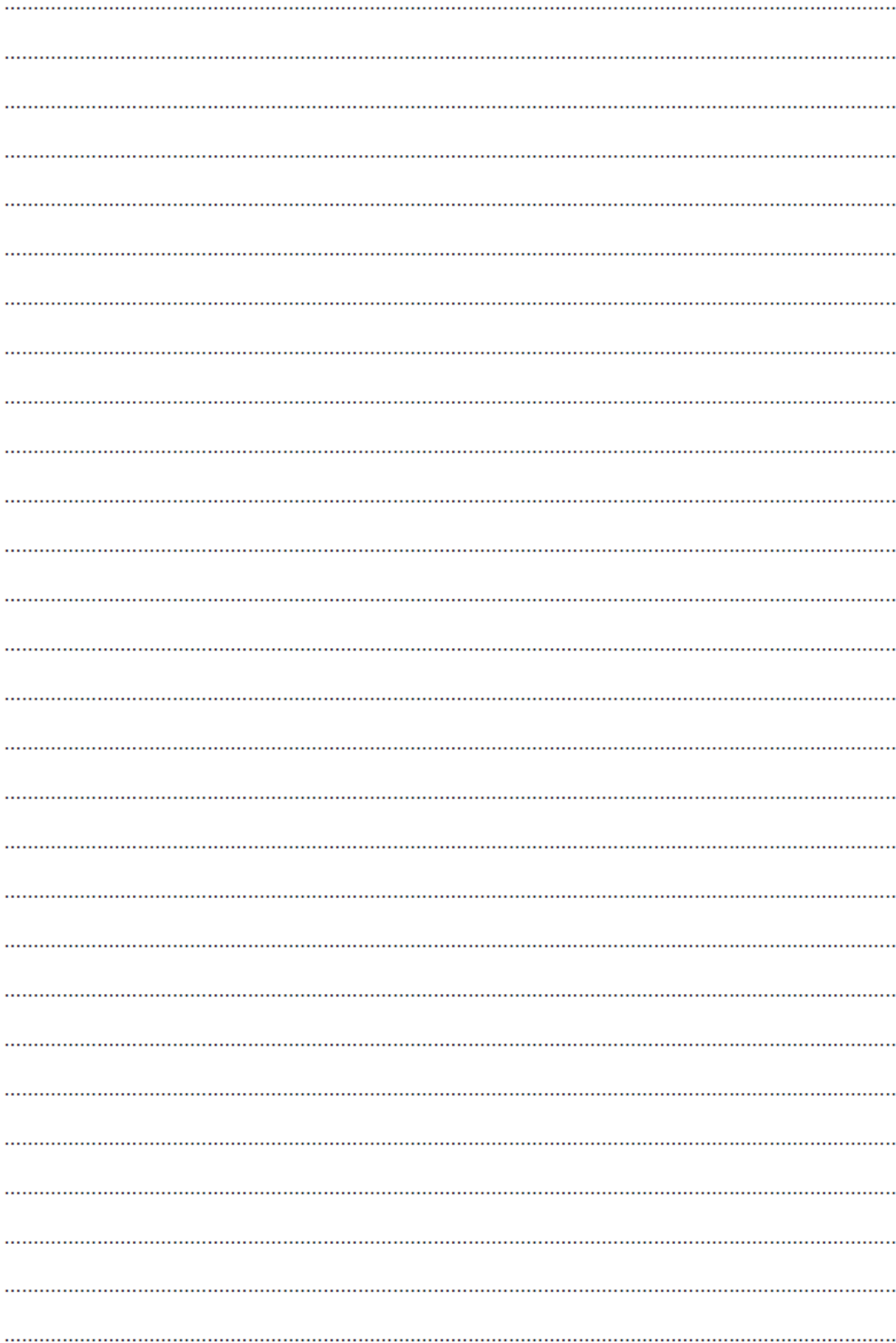You must answer on the question paper.

You will need: Insert (enclosed)

INSTRUCTIONS
- Answer **two** questions in total:
  - Section A: answer **Question 1**.
  - Section B: answer **one** question.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- If additional space is needed, you should use the lined pages at the end of this booklet; the question number or numbers must be clearly shown.
- Dictionaries are **not** allowed.

INFORMATION
- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].
- The insert contains the reading texts.

Read Text A and Text B in the insert and then answer **Section A, Question 1** on this question paper.

Section A: Directed Writing

Question 1

Imagine you are a pupil in a school which does not have a school council.

Write a speech to be given in a school assembly, giving your views on whether or not students should participate in decisions made about the school.

In your speech you should:
- evaluate the views given in both texts about student participation
- give your own views, based on what you have read, about whether a school council would benefit students and teachers.

Base your speech on what you have read in **both** texts, but be careful to use your own words. Address both of the bullet points.

Begin your speech: 'Thank you for coming to listen to me today …'.

Write about 250 to 350 words.

Up to 15 marks are available for the content of your answer, and up to 25 marks for the quality of your writing.

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Answer **one** question from Section B.

Write about 350 to 450 words on **one** of the following questions. Answer on this question paper.

Up to 16 marks are available for the content and structure of your answer, and up to 24 marks for the style and accuracy of your writing.

EITHER

Descriptive writing

2   Describe an occasion when a group of people are eating together.

OR

Descriptive writing

3   Describe a busy train or bus station.

OR

Narrative writing

4   Write a story that includes the words, '… nothing could have prepared him for what he saw …'.

OR

Narrative writing

5   Write a story that involves a character new to the area.

Please write your chosen question number here (2, 3, 4, 5): ....

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Additional Page

If you use the following lined page to complete the answer(s) to any question(s), the question number(s) must be clearly shown.

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MATHEMATICS

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1   Write the following numbers in order of size.
    Start with the smallest number.

    0.4   0.02   0.37   0.152   0.2

    ....

    (Total for Question 1 is 1 mark)

2   Write 0.6 as a percentage.

    .... %

    (Total for Question 2 is 1 mark)

3   Here is a list of numbers.

    3   5   7   12   15   18   20

    From the list, write down a factor of 10

    ....

    (Total for Question 3 is 1 mark)

4   Write 7829 to the nearest 1000

    ....

    (Total for Question 4 is 1 mark)

5 (a) Work out $3 \times 5 + 7$

....

(1)

(b) Work out 2^3

....

(1)

(c) Write brackets ( ) in this statement to make it correct.

$$7 \times 2 + 3 = 35$$

(1)

(Total for Question 5 is 3 marks)

6 Sue has 2 cats.

Each cat eats $\frac{1}{4}$ of a tin of cat food each day.
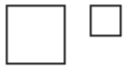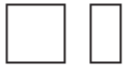
Sue buys 8 tins of cat food.

Has Sue bought enough cat food to feed her 2 cats for 14 days?
You must show how you get your answer.

(Total for Question 6 is 3 marks)

7   There are only apple trees, cherry trees, pear trees and plum trees in an orchard.

The pictogram shows information about the numbers of apple trees, cherry trees and pear trees in the orchard.

Apple	□ □ □
Cherry	□ ◻
Pear	□ ▯
Plum	

Key:

□ represents 4 trees

There is a total of 30 trees in the orchard.

Complete the pictogram.

(Total for Question 7 is 3 marks)

8
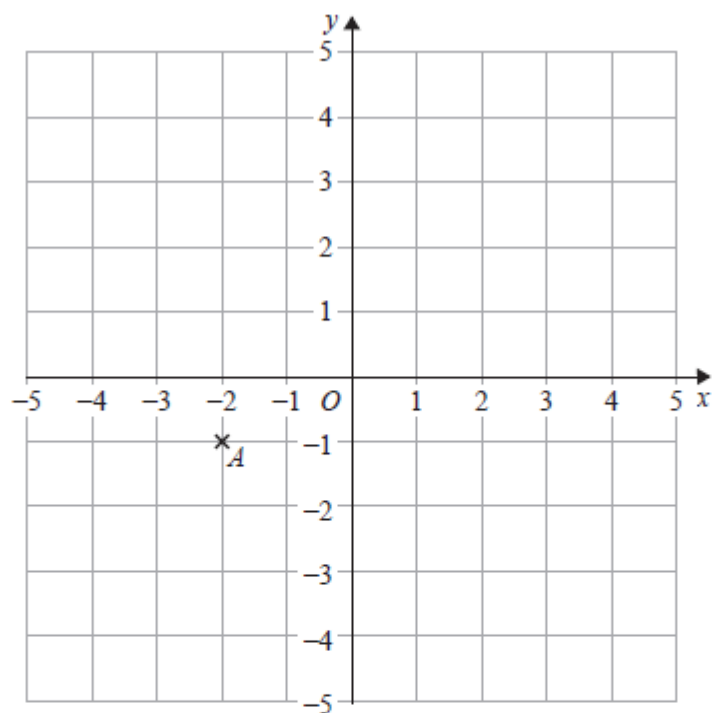
(a) Write down the coordinates of point A.

(........................ , ...)

(1)

(b) On the grid, mark with a cross (×) the point (2, 3)
Label this point B.

(1)

_____ **(Total for Question 8 is 2 marks)** _____

9 $g = 9$
$h = 4$

Work out the value of $2g + 3h$

....

(Total for Question 9 is 2 marks)

10 Write down two prime numbers that have a sum of 32

.... , ...

(Total for Question 10 is 2 marks)

11 Here are some fractions.

$$\frac{9}{12} \qquad \frac{6}{8} \qquad \frac{18}{24} \qquad \frac{10}{16} \qquad \frac{15}{20}$$

One of these fractions is **not** equivalent to $\frac{3}{4}$

(a) Which fraction?

....
(1)

(b) Work out $\quad \frac{1}{12} + \frac{5}{6}$

....
(2)

(Total for Question 11 is 3 marks)

12 Tom uses his lorry to deliver bricks.

You can use this graph to find the delivery cost for different distances.
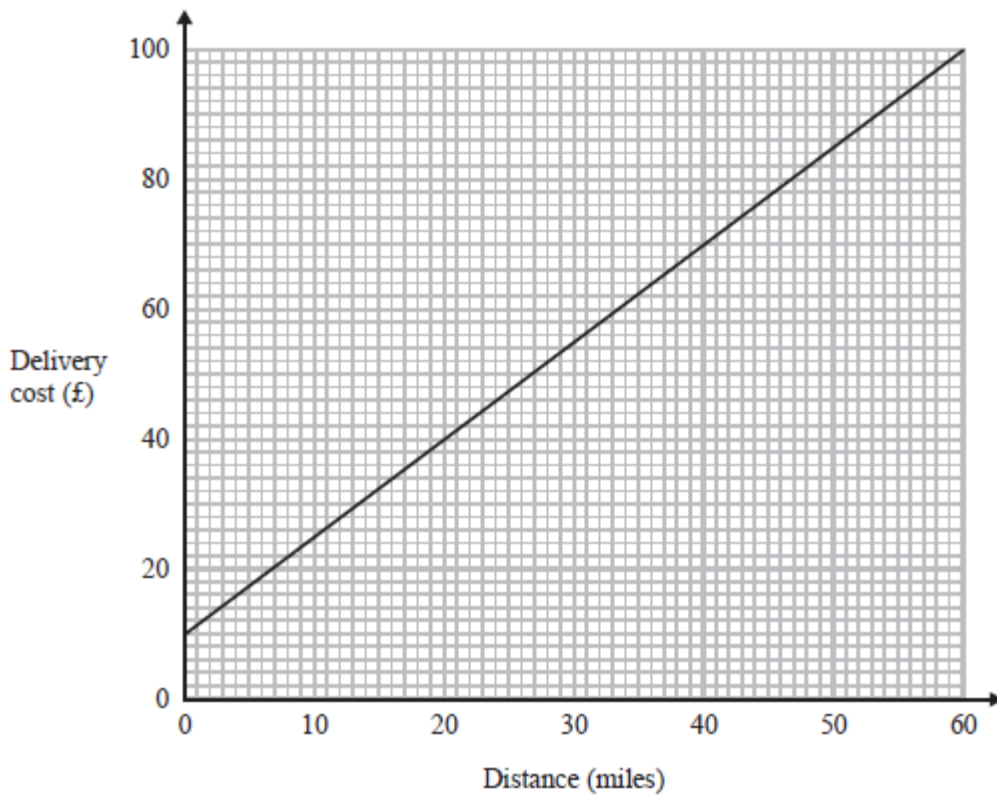
For each delivery, there is a fixed charge plus a charge for the distance.

(a) How much is the fixed charge?

£ ....
(1)

Tom makes two deliveries of bricks.
The distance of one delivery is 20 miles more than the distance of the other delivery.

(b) Work out the difference between the two delivery costs.

£ ....
(2)

(Total for Question 12 is 3 marks)

13 Azmol, Ryan and Kim each played a game.

Azmol's score was four times Ryan's score.
Kim's score was half of Azmol's score.

Write down the ratio of Azmol's score to Ryan's score to Kim's score.

14 The diagram shows quadrilateral *ABCD* with each of its sides extended.
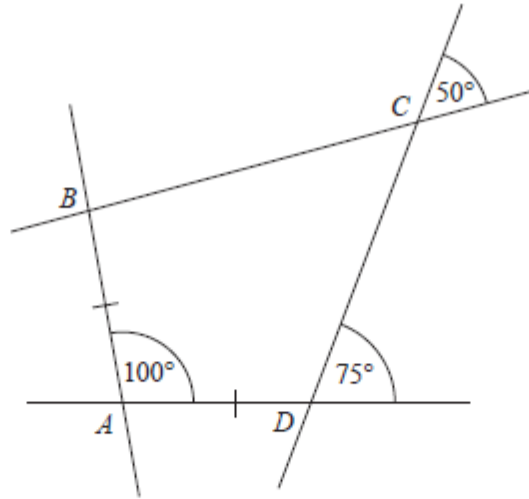
$AB = AD$

Show that *ABCD* is a kite.
Give a reason for each stage of your working.

15 Shahid is going to use these instructions to make a fizzy drink.

> Mix 5 parts of orange juice
> with 2 parts of lemonade

Shahid thinks that he has 300 ml of orange juice and 200 ml of lemonade.

(a) If Shahid is correct, what is the greatest amount of fizzy drink he can make?

.... ml

(3)

Shahid has 300 ml of orange juice but he only has 160 ml of lemonade.

(b) Does this affect the greatest amount of fizzy drink he can make?
    Give a reason for your answer.

....

....

....

(1)

(Total for Question 15 is 4 marks)

16 Here are two rectangles.

6 cm

8 cm

10 cm

12 cm
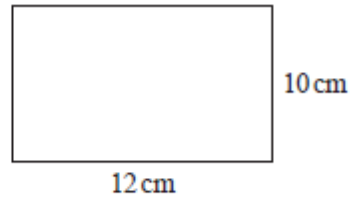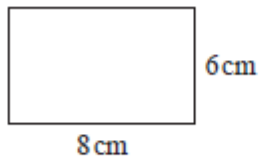
Jim says,

"The two rectangles are similar because $8 + 4 = 12$ and $6 + 4 = 10$"

Is Jim correct?
Explain your answer.

....

....

(Total for Question 16 is 1 mark)

18 Food Mart and Jan's Store sell boxes of the same type of breakfast cereal.

Each shop has a special offer.

Food Mart

Jan's Store

400 g

20% off the
normal price of
£5

400 g
plus 30% extra

£5
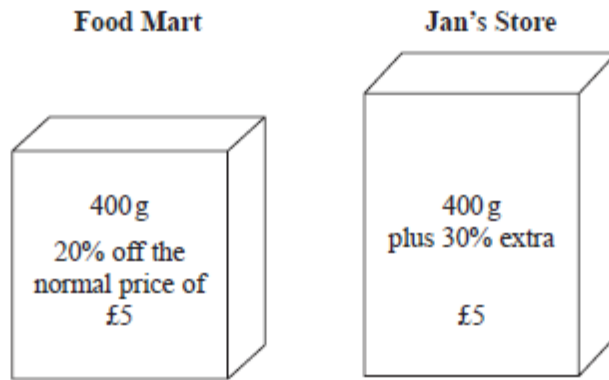
Which box of cereal is the better value for money?
You must show your working.

20 Work out the value of $\dfrac{3^7 \times 3^{-2}}{3^3}$

....

(Total for Question 20 is 2 marks)

---

21 $v^2 = u^2 + 2as$

$u = 12 \quad a = -3 \quad s = 18$

(a) Work out a value of v.

....

(2)

(b) Make s the subject of $\quad v^2 = u^2 + 2as$

....

(2)

(Total for Question 21 is 4 marks)

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22 A bonus of £2100 is shared by 10 people who work for a company.
40% of the bonus is shared equally between 3 managers.
The rest of the bonus is shared equally between 7 salesmen.

One of the salesmen says,

"If the bonus is shared equally between all 10 people I will get 25% more money."

Is the salesman correct?
You must show how you get your answer.

23 It would take 120 minutes to fill a swimming pool using water from 5 taps.

(a) How many minutes will it take to fill the pool if only 3 of the taps are used?

.... minutes

(2)

(b) State one assumption you made in working out your answer to part (a).

....

....

(1)

(Total for Question 23 is 3 marks)

24 A plane travels at a speed of 213 miles per hour.

(a) Work out an estimate for the number of seconds the plane takes to travel 1 mile.

.... seconds

(3)

(b) Is your answer to part (a) an underestimate or an overestimate?
Give a reason for your answer.

....

....

(1)

(Total for Question 24 is 4 marks)

25 Solve the simultaneous equations

$$5x + y = 21$$
$$x - 3y = 9$$

$x =$ ....

$y =$ ....

(Total for Question 25 is 3 marks)

26 The diagram shows a square $ABCD$ with sides of length $20\,cm$.
It also shows a semicircle and an arc of a circle.

D C

A B

$20\,cm$
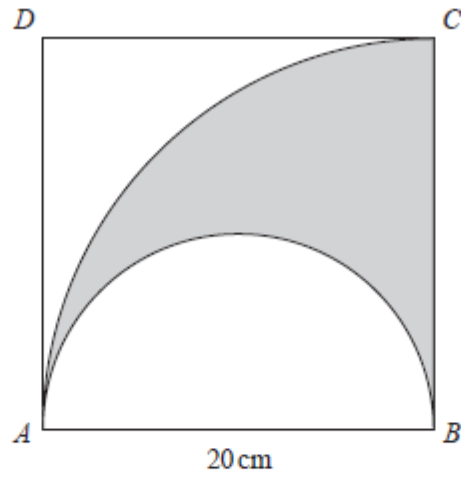
AB is the diameter of the semicircle.
AC is an arc of a circle with centre B.

Show that $\dfrac{\text{area of shaded region}}{\text{area of square}} = \dfrac{\pi}{8}$

(Total for Question 26 is 4 marks)

28 The size of each interior angle of a regular polygon is 11 times the size of each exterior angle.

Work out how many sides the polygon has.

Topic : Limits of Accuracy (Lower and Upper Bound)

1.   The weight of a bag of potatoes is 25 kg, correct to the nearest kg.

   (a)   Write down the smallest possible weight of the bag of potatoes.

.... kg

(1)

   (b)   Write down the largest possible weight of the bag of potatoes.

.... kg

(1)
(Total 2 marks)

2.   The length of a line is 63 centimetres, correct to the nearest centimetre.

   (a)   Write down the **least** possible length of the line.

.... centimetres

(1)

   (b)   Write down the **greatest** possible length of the line.

.... centimetres

(1)
(Total 2 marks)

3.   A field is in the shape of a rectangle.

The length of the field is 340 m, to the nearest metre.
The width of the field is 117 m, to the nearest metre.

Calculate the upper bound for the perimeter of the field.

.... m
(Total 2 marks)

4. The length of a rectangle is 30 cm, correct to 2 significant figures.
    The width of a rectangle is 18 cm, correct to 2 significant figures.

    (a)   Write down the upper bound of the width.

(1)

.... cm

    (b)   Calculate the upper bound for the area of the rectangle.

(2)

.... cm
(Total 3 marks)

5.
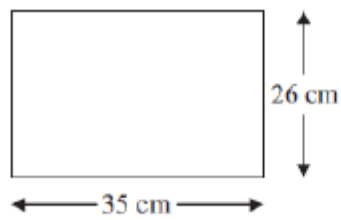
Diagram **NOT** accurately drawn

The length of the rectangle is 35 cm correct to the nearest cm.
The width of the rectangle is 26 cm correct to the nearest cm.

Calculate the upper bound for the area of the rectangle.
Write down all the figures on your calculator display.

....cm^2

(Total 3 marks)

6. A field is in the shape of a rectangle.
    The width of the field is 28 metres, measured to the nearest metre.

    (a)   Work out the upper bound of the width of the field.

    .... metres

    (1)

The length of the field is 145 metres, measured to the nearest 5 metres.

(b) Work out the upper bound for the perimeter of the field.

    .... metres

    (3)

    (Total 4 marks)

7. Steve measured the length and the width of a rectangle.
    He measured the length to be 645 mm correct to the nearest 5 mm.
    He measured the width to be 400 mm correct to the nearest 5 mm.

    Calculate the lower bound for the area of this rectangle.
    Give your answer correct to 3 significant figures.

    .... mm^2

    (Total 3 marks)

8. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula

$$c = \frac{d}{f}$$

where d is the distance travelled, in kilometres, and f is the fuel used, in litres.

$d = 163$ correct to 3 significant figures.
$f = 45.3$ correct to 3 significant figures.

By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

$c =$ ....

(Total 5 marks)

9. The voltage V of an electronic circuit is given by the formula

$$V = IR$$

where I is the current in amps
and R is the resistance in ohms.

Given that $V = 218$ correct to 3 significant figures,
             $R = 12.6$ correct to 3 significant figures,

calculate the lower bound of I.

*10. $m = \dfrac{\sqrt{s}}{t}$

$s = 3.47$ correct to 2 decimal places.
$t = 8.132$ correct to 3 decimal places.

By considering bounds, work out the value of m to a suitable degree of accuracy.

You must show all your working and give a reason for your final answer.

(Total 5 marks)

ECONOMICS

Attempt any **TWO** projects:

Project 1: learners need to produce a newspaper article predicting how a recent change in government fiscal policy in the situation of COVID 19 crisis might affect **their country's** macroeconomic performance. The article should include a non-technical explanation of how and why these economic indicators will be affected.

Project 2: learners need to research the recent monetary policy history of **their country**. To what extent has the country successfully used monetary policy to manage its economy in the situation of COVID 19?

Project 3: learners need to define GDP per head (per capita). They need to collect last 20 years growth data of their own country from official websites. Students will define the term recession and boom from the concept of business cycle. They can then review the collected growth rate data and can identify periods of business cycle. They can then share their findings in a project report and use this to produce a list of the possible causes of recession.

Project 4: learners need to research a specific country (preferably their own country) and produce a report describing how its patterns of employment have changed over the past fifteen years. For example, the report should cover: the change in proportion of: workers employed in the primary, secondary and tertiary sectors; workers employed in the formal and informal economy; women in the labour force; workers employed in the public sector. They can then offer explanations for these changes. These findings are then discussed in a project report which will lead to a conclusion about how, as a country develops: patterns of employment change; social attitudes change; and greater market activity is encouraged. Students need to collect related data from official websites.

Then learners need to investigate a specific country (preferably their own country) that has recently seen an increase in unemployment and produce a report explaining the factors influencing this change..

Some standard instruction to prepare the report:
1. Font and font size: Times new Roman, 12
2. For headings font size: 14
3. Maximum no of pages: 15 (including the cover page) for two projects.
4. Cover page information contains Title of the project, Name of the student, admission no, Class, and Subject
5. Last page: Reference and source
6. Include some relevant data and pictures in project report
7. Submission date of the report: 4th July, 2020

BUSINESS STUDIES

Answer the following questions

Each question carries 2 Marks.

1. Identify and explain two reasons owners of a new business will need finance to set it up?

2. State two methods of raising Finance internally, and mention one advantage of each method

3. State two methods of raising short term finance externally and list one advantage of each method.

4. Explain the advantages to a business of an overdraft as opposed to a bank loan.

5. Identify and explain two advantages a bank loan may have over a share issue for a company.

6. Identify and explain two factors that an investor would consider before deciding whether to invest in a company or not.

7. What is meant by cash inflow

8. Mention ways in which a business can receive cash inflows.

9. What is meant by working capital.

10. State two reasons why managers need accounting information about their business.

11. Explain difference between net profit and retained profit.

12. Explain two examples of current liability likely to be on the balance sheet of a recently set up business making and selling clay pot.

13. Explain the difference between an income statement and a balance sheet.

14. Explain why any three stakeholder groups would find the accounts of a business useful.

15. Explain why ratio analysis is more useful than just comparing individual figures from company account.

ACCOUNTING

Objective:

The student will be able to apply their knowledge and understanding of the subject and various topics in solving the board question papers.

Instructions to students:

Take a print of the question papers mentioned below. They have been already emailed to the students.

All questions to be done in the paper itself as it is a working paper

The question papers should be put in a file for submission

Only question numbers mentioned below have to be done which is as per the topics completed in the class.

Question Papers

0452/s/12/2016 :Question Number : 1, a ,b, e, f, h, I and J , 2, 3 all except sub parts g and h , 4 , 5 and 6 whole

0452/s/22/2016 : Question Number : 1,3, 4 and 5 (All sub parts)

xxxxxxxxxxxxxxx

COMBINED SCIENCE

Q1.

Pure iron can be prepared by electrolysis of an aqueous solution of a suitable iron(II) salt.

Draw a labelled diagram of an electrolysis cell that could be used to carry out this reaction. In your diagram include

- the electrodes,
- the electrolyte,
- the power supply.

[3]

(i) State the name of an element that could be used for the electrodes.

.... [1]

(ii) State **one** property that an electrode should have.

.... [1]

Q2.

Chlorine and sodium hydroxide are manufactured by the electrolysis of concentrated aqueous sodium chloride.

(a) Chlorine is produced at the positive electrode (anode).

Name the substance produced at the negative electrode (cathode) during the electrolysis.

.... [1]

(b) State the name of the particle that is removed from a chloride ion to make a chlorine atom.

.... [1]

(c) Complete the electronic structure of a chlorine molecule.
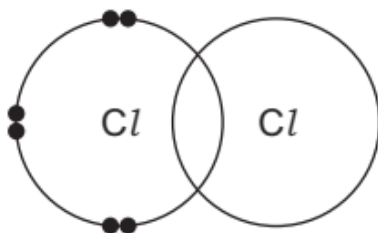
[2]

Q3.

Complete the following table which gives the number of protons, electrons and neutrons in each of the five particles.

particle	number of protons	number of electrons	number of neutrons
....	19	19	20
$^{56}_{26}Fe$	....	....	....
....	3	2	4
$^{70}_{31}Ga^{3+}$	....	....	....
....	34	36	45

[Total: 8]

TYPE I- MULTIPLE CHOICE QUESTIONS

1.

When substance X is electrolysed, the amount of gases P and Q formed is shown.
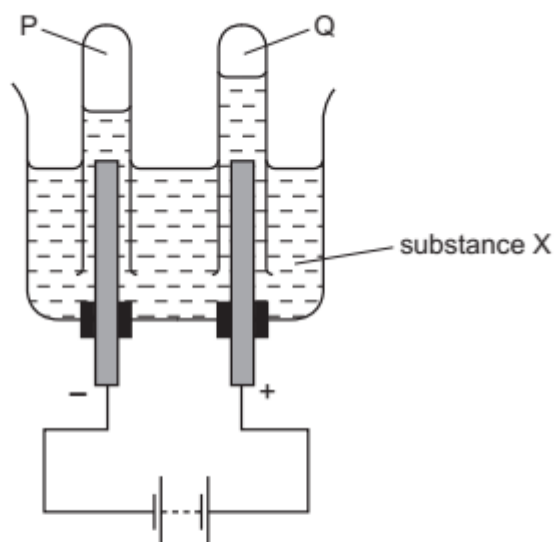
What is substance X?

A concentrated aqueous sodium chloride

B concentrated hydrochloric acid

C dilute sulfuric acid

D molten lead(II) bromide

2.

What are the products at the electrodes when dilute sulfuric acid is electrolysed using inert electrodes?

	anode	cathode
A	hydrogen	oxygen
B	oxygen	hydrogen
C	sulfur	oxygen
D	sulfur dioxide	hydrogen

3.

Electricity is passed separately through concentrated hydrochloric acid, concentrated aqueous sodium chloride and dilute sulfuric acid.

In which rows are the electrolysis products correctly named?

		cathode product	anode product
1	concentrated hydrochloric acid	hydrogen	chlorine
2	concentrated aqueous sodium chloride	sodium	chlorine
3	dilute sulfuric acid	hydrogen	oxygen

A 1, 2 and 3   **B** 1 and 2 only   **C** 1 and 3 only   **D** 2 and 3 only

4.

Which row describes the electrolysis of molten potassium bromide?

	product at anode	product at cathode
A	bromine	hydrogen
B	bromine	potassium
C	hydrogen	bromine
D	potassium	bromine

5.

What are the electrode products when molten silver iodide is electrolysed between inert electrodes?

	cathode	anode
A	hydrogen	iodine
B	iodine	silver
C	silver	iodine
D	silver	oxygen

6.

Copper and hydrogen can each be formed by electrolysis.

At which electrodes are these elements formed?

	copper	hydrogen
A	anode	anode
B	anode	cathode
C	cathode	anode
D	cathode	cathode

7.

Which products are formed at the electrodes when a concentrated solution of sodium chloride is electrolysed?

	cathode (−)	anode (+)
A	hydrogen	chlorine
B	hydrogen	oxygen
C	sodium	chlorine
D	sodium	oxygen

8.

Which products are formed at the anode and cathode when electricity is passed through molten lead(II) bromide?

	anode (+)	cathode (−)
A	bromide ions	lead ions
B	bromine molecules	lead atoms
C	lead atoms	bromine molecules
D	lead ions	bromide ions

9.

What will be produced at the anode and at the cathode, if molten potassium chloride is electrolysed?

	anode (+)	cathode (-)
A	chlorine	hydrogen
B	chlorine	potassium
C	hydrogen	chlorine
D	potassium	chlorine

10.

The diagram shows an electrolysis circuit.

At which electrode is hydrogen formed?
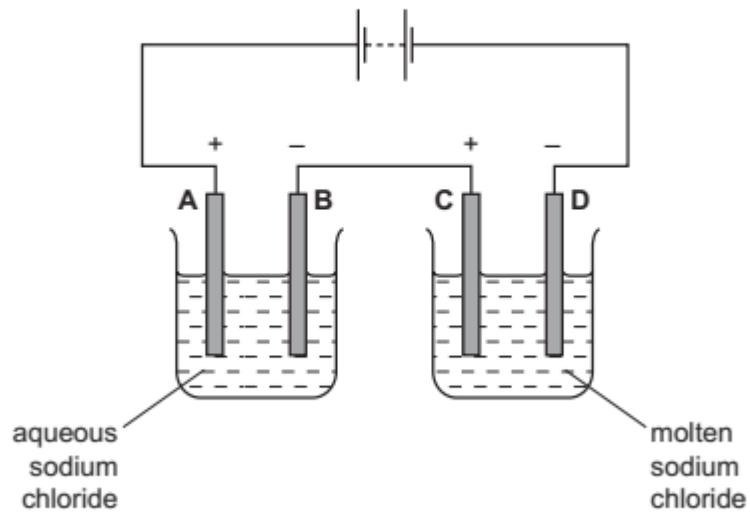
1. Fig. 1.1 shows a solar-powered lantern. It uses photovoltaic (solar) cells which charge a batteryduring the day.
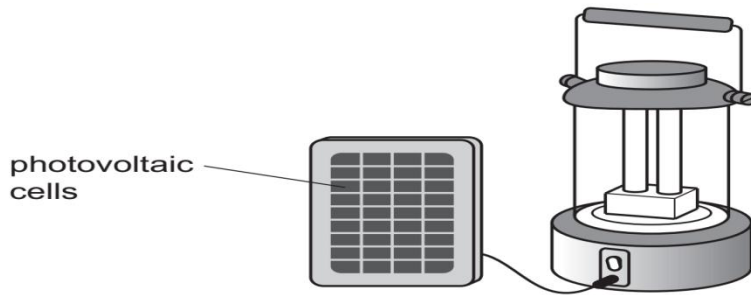
Fig.1.1

(a) When the lantern is switched on so that the lamp lights, the battery supplies a current to two lamps connected in parallel.

Complete the circuit diagram for the circuit within the lantern.
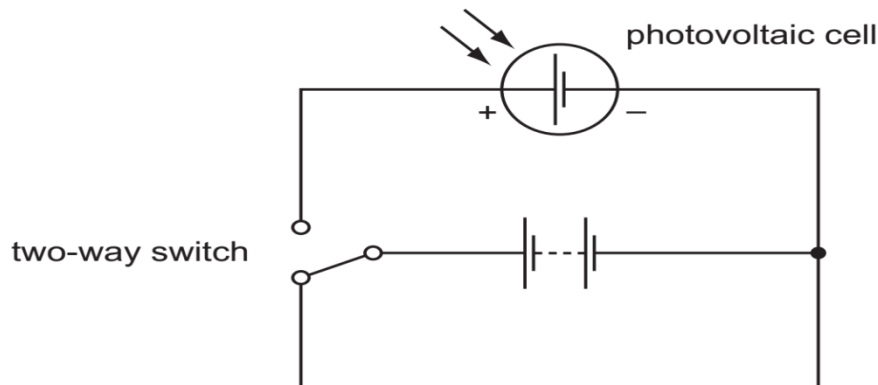
[2]

(b) (i) The battery has a voltage of 3V when fully charged, and supplies a current of 0.6A to the lamps. Calculate the power output from the battery.

State the formula you use, show your working and state the unit of your answer.

formula

working

power = unit [3]

(ii) Another version of the solar lantern has the same battery and lamps but the lamps are connected in series instead of in parallel.

Describe and explain the effect this difference will have on the operation of the lantern.

[2]

2. A student is building a model car.
   Fig. 2.1 shows a circuit he designs for the electrical equipment he wants in the car.
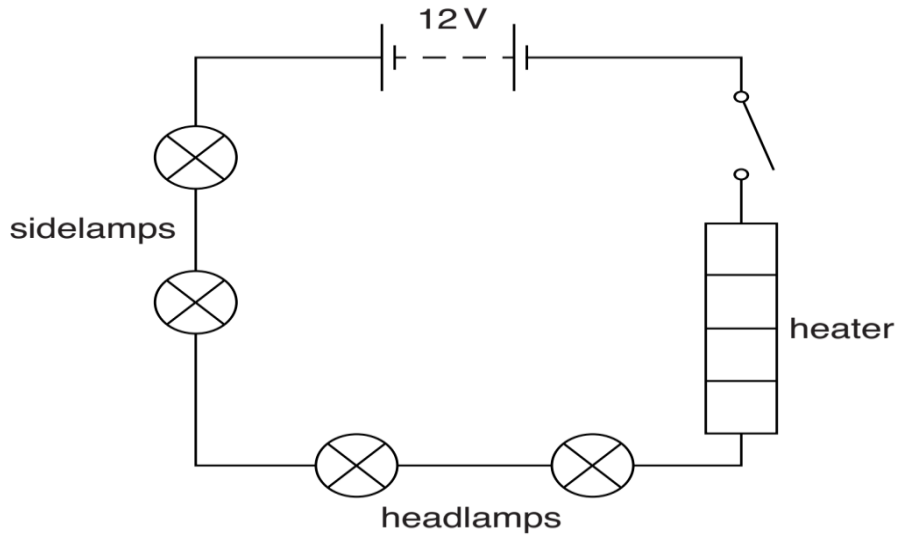
Fig.2.1

(a) Fig 2.2 shows the lamps and heater he uses for his model. The markings on the lamps and heater are shown below the pictures.

sidelamp	headlamp	heater
6 V, 0.5 A	6 V, 2 A	12 V, 120 W

Fig.2.2

State and explain what is meant by each of these quantities when written on a component.

6 V ....

....

120 W ....

....[4]

(b) When the student switches on the circuit in Fig. 2.1, the lamps glow only very faintly. He has not designed his circuit correctly.

On Fig. 2.3 complete the circuit diagram to show the side lamps and heater connected so that all the lamps glow brightly.
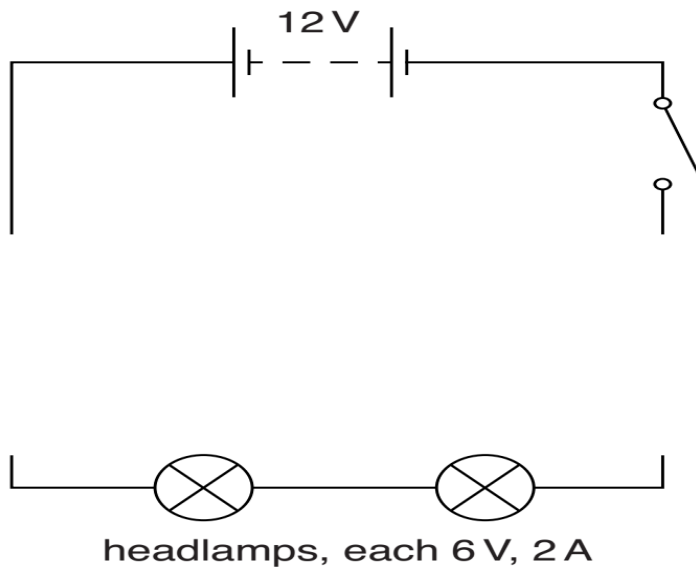
Fig.2.3

(c) Calculate the current through the heater when it is working properly at 12 V and 120 W. State the formula that you use and show your working.

formula

working

current = ... A [2]

(d) The heater is designed to transfer thermal energy to the air to warm the inside of the model car.Name the method of thermal energy transfer involved when the warm air circulates inside the car.

....[1]

3. A student wants to investigate the current through an electric buzzer. He designs the circuit in Fig. 3.1 to use in his investigation.
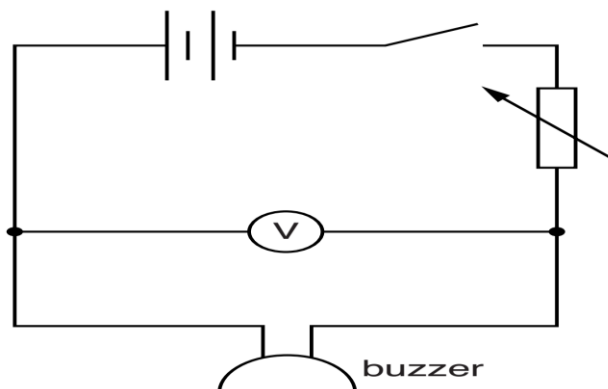
Fig.3.1

(a) (i) Name the component represented by this symbol.
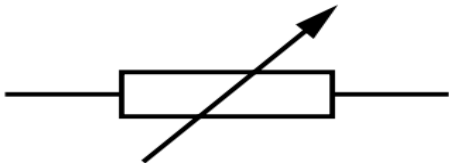
.... [1]

(ii) State and explain why the student includes this component in his circuit.

....

....

....

.... [2]

(iii) The student has left out an important component from his circuit that is needed to measure the current.

On Fig. 3.2 complete the circuit diagram and include the symbol for this missing component in its correct place.
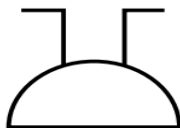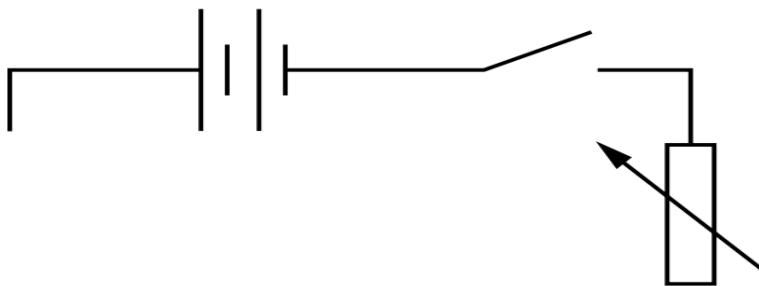
Fig.3.2   [2]

(b) The student uses the correct circuit for his experiment. Fig. 3.3 shows his results plotted as a graph.
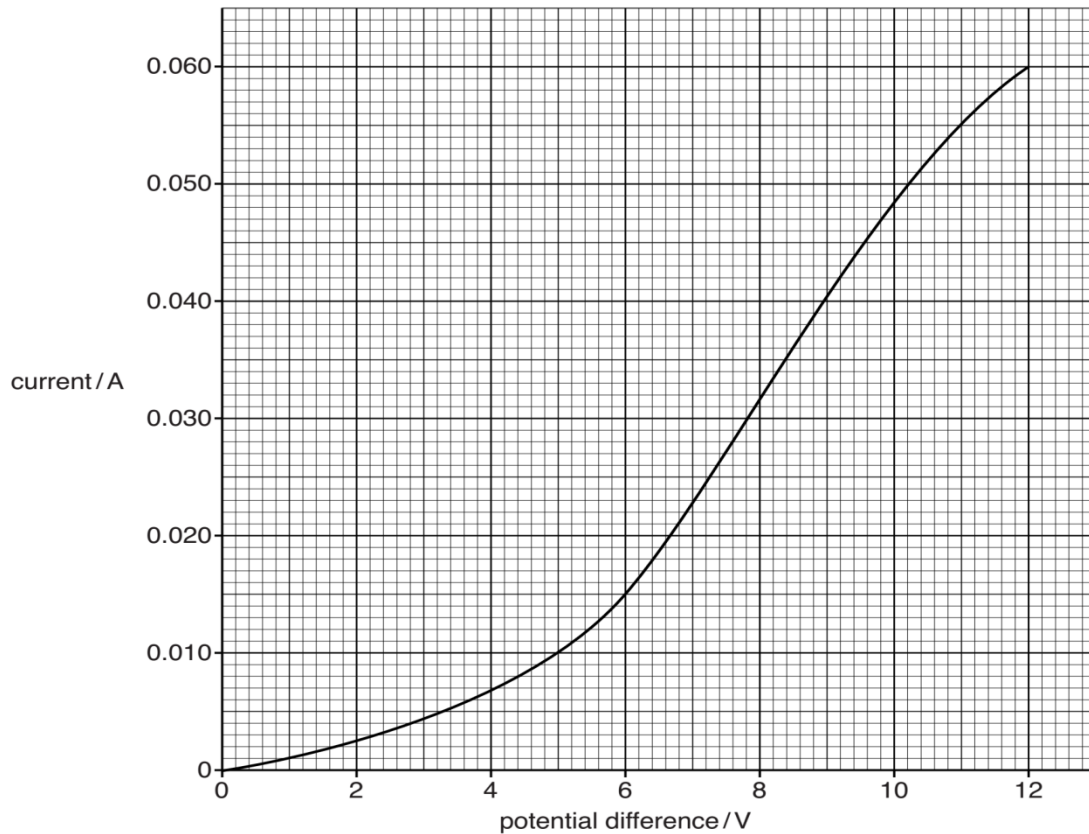
Fig.3.3

The resistance of the buzzer is given by the formula

$$resistance = \frac{potential\ difference\ (p.d.)}{current}$$

The student says that the resistance of the buzzer is lower when the p.d. is 12 V than when the p.d. is 6 V. The resistance at 12 V is 200Ω.

Use information from the graph in Fig. 3.3 to calculate the resistance at 6 V to show that he was correct.

resistance at 6 V = ...Ω [2]

(b) The buzzer emits a very loud sound at 3000 Hz with a wavelength of 0.11 m. A student 1 km away from the buzzer hears the sound after a short time.
Calculate the time taken by the sound to reach the student.
State any formula you use and show your working.
formula
working

time = ... s [3]

4. Fig. 4.1 shows an electrically-powered bicycle.
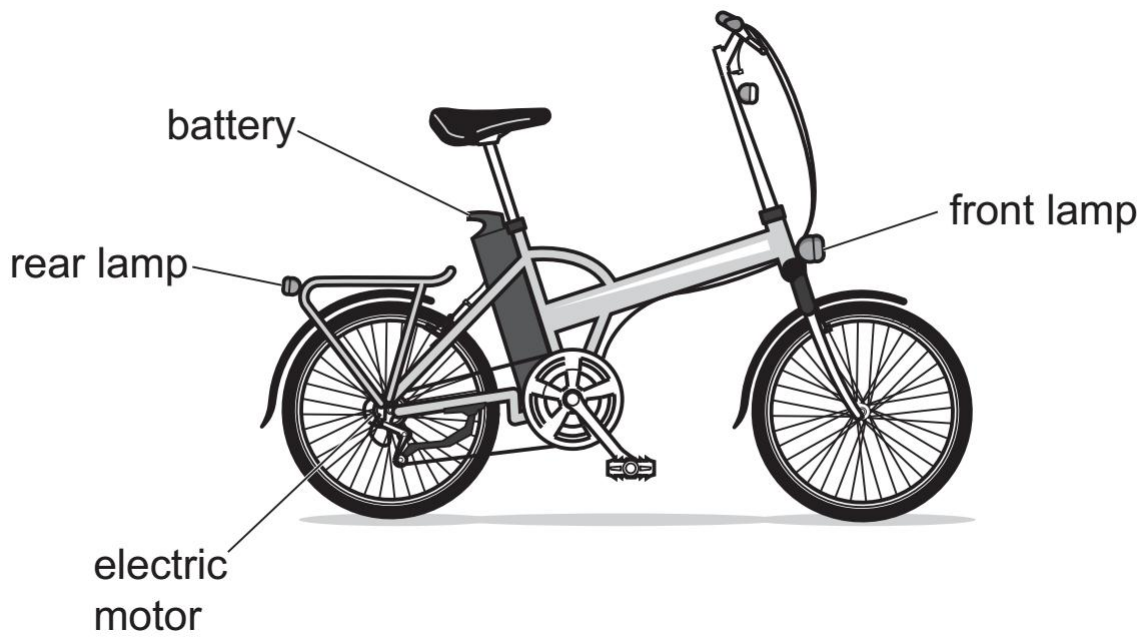
Fig.4.1

(a) The battery has to supply power to the electric motor, and to both front and rear lamps. A switch controls the whole circuit.

The rider controls the speed of the bicycle by changing the current in the electric motor.

The two lamps are controlled by one more switch. However, if one lamp fails the other lamp is still lit.

(i) Name a circuit component that can be used to change the current in a circuit.

.... [1]

(ii) On Fig. 4.2 complete the circuit diagram for this electric bicycle. Include the component you have named in **(a)(i)** to change the speed of the motor.
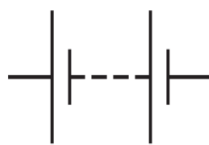

Fig.4.2   [4]

(c) The battery has an output voltage of 36V, and the current in the motor at maximum speed is 7.0A.

(i) Calculate the power output of the electric motor at maximum speed.

Show your working and give the unit of your answer.

power = ... unit .... [3]

(ii) The cyclist rides the bicycle at maximum speed for a journey.

State one further quantity required to calculate the total energy provided by the battery on this journey.

.... [1]

Topic :Human Reproduction

Make a Powerpoint presentation to explain the following (You will be required to explain to your classmates after vacations)

- Human immunodeficiency virus (HIV) infection may lead to acquired immune deficiency syndrome (AIDS)
- Describe the methods of transmission of HIV
- Explain how the spread of sexually transmitted infections (STIs) is controlled

PHYSICS

Topic: Electromagnetic Induction

Make a PowerPoint presentation to include the following (the submission is not the PowerPoint file, but the spoken presentation you will give, with the aid of the file):

- Describe an experiment to demonstrate electromagnetic induction.
- Describe and explain a rotating-coil generator and the use of slip rings.
- Describe the construction of, and the principle(s) behind the working of a basic transformer with a soft-iron core, as used for voltage transformations.

BIOLOGY

Topic: Human Reproduction

Make a PowerPoint presentation to explain the following (You will be required to explain to your classmates after vacations)

- Describe the function of the placenta and umbilical cord in relation to exchange of dissolved nutrients, gases and excretory products and providing a barrier to toxins and pathogens (structural details are not required)
- State that some toxins, e.g. nicotine, and pathogens, e.g. rubella virus, can pass across the placenta and affect the fetus
- Discuss the advantages and disadvantages of breast-feeding compared with bottle-feeding using formula milk