

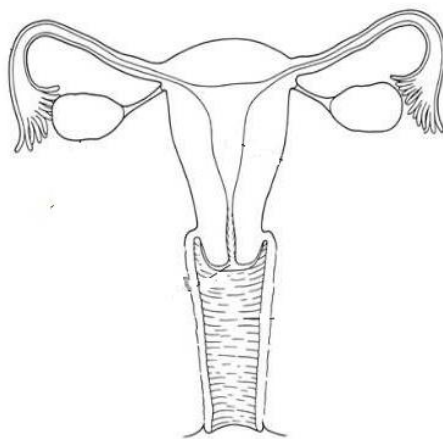
Annual Examinations for Secondary Schools 2023

YEAR 11 **SCIENCE AND TECHNOLOGY** **TIME: 1 hour**

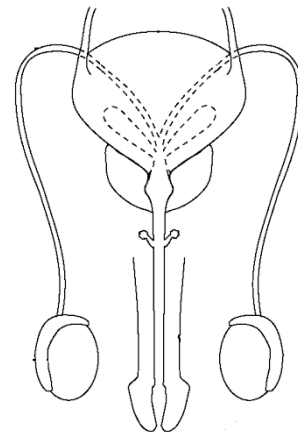
Name: _____

Class: _____

1. Figure 1 shows the male and the female reproductive systems.



Female reproductive system



Male reproductive system

<https://quizlet.com/253485354/female-reproductive-system-diagram/>
<https://quizlet.com/278966014/male-reproductive-system-diagram-9th-diagram/>

Figure 1

- a. On the diagram label with the letter 'A' the organ which produces eggs (ova). (1)
- b. On the diagram label with the letter 'B' the region where sperms are produced. (1)
- c. From the three statements below, underline **ONE** that describes the function of the uterus in the female reproductive system:
- Provides a suitable environment for fertilisation to occur.
 - Makes hormones that control the menstrual cycle.
 - Implantation of fertilised egg. (1)

Total: 3 marks

2. Daniel varies the food he eats to obtain all the nutrients required for a balanced diet. Complete the table below with the correct food types or importance.

Food types	Importance
	Contain complex carbohydrates and provides the body with energy.
Fruit and vegetables	
Milk and its products	
	Provides protein and help in the building up of body cells.

(4)

Total: 4 marks

3.



Petra went for a run around the school block.

Decide whether the following observations are **true (T)** or **false (F)**. Write a 'T' or 'F' in the table below accordingly.

Statement	T/F
During exercise the number of breaths per minute decreases.	
During exercise a person feels hot and becomes sweaty.	
During exercise the heartbeat rate increases.	

(3)

Total: 3 marks

4. Figure 2 shows two iron nails hanging from a bar magnet.

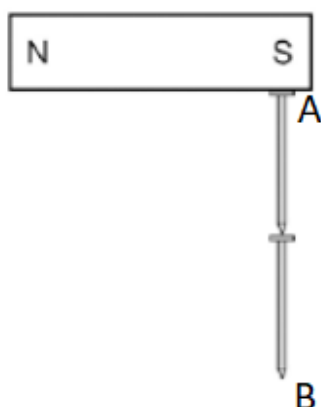


Figure 2

- a. State the polarities at points A and B.

Point A _____ Point B _____ (2)

- b. Each of the three metal bars in Figure 3 is either a bar magnet or an unmagnetized piece of iron. The forces that act between the bars when different ends are placed close together, are shown by the arrows.

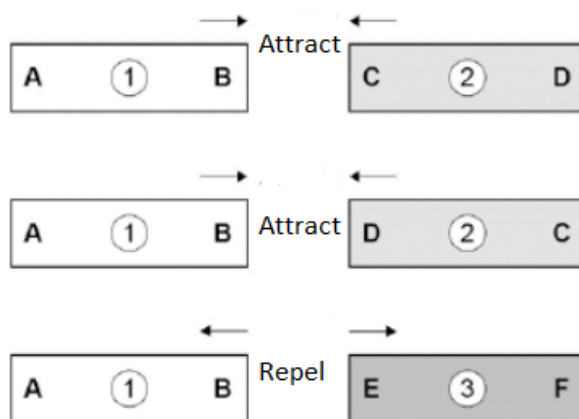


Figure 3

Give the number of the bar which is an unmagnetized piece of iron.

_____ (1)

- c. Ruth investigated the strength of different fridge magnets by putting small pieces of sheet of paper between each magnet and the fridge door.

Ruth measured the maximum number of sheets of paper that each magnet was able to hold in place.



- i. Explain why it is important that each sheet of paper has the same thickness.

_____ (1)

- ii. The table below shows the results of Ruth's investigation.

Fridge magnet	Area of magnet in mm ²	Number of paper sheets held	
A	40	20	
B	110	16	
C	250	6	
D	340	8	
E	1350	4	

Ruth thinks that the bigger the area of a fridge magnet, the stronger the magnet will be. Give **ONE** reason why the results from the investigation show that Ruth is wrong.

_____ (2)

Total: 6 marks

5. Circle the objects below which make use of turning forces.



A



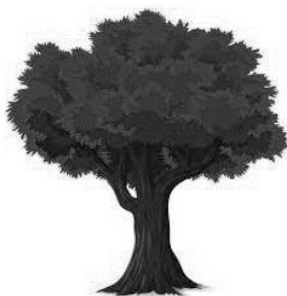
B



C



D



E



F

(4)

Total: 4 marks

(please turn over for the next question)

6. A domestic electric washing machine is made up of many different mechanical and electronic parts. Look carefully at the washing machine shown in Figure 4 to answer the following questions.

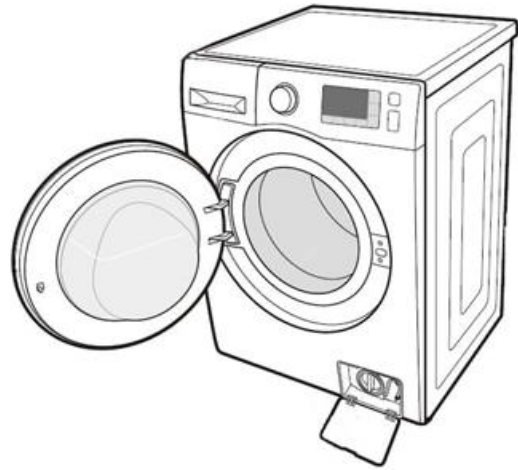


Figure 4

- a. Fill in the blanks to complete the following specification list for an electric washing machine.

SPECIFICATION LIST

The washing machine should:

- be able to wash a maximum load of 9kg
- fit within a space of width of _____ x height of 800 mm x depth of 600 mm. (Estimate dimension)
- work with 240V supply
- be eco-friendly, therefore consumes _____

(2)

- b. Use the text in boxes A, B and C to complete Figure 5, explaining how a washing machine system works.

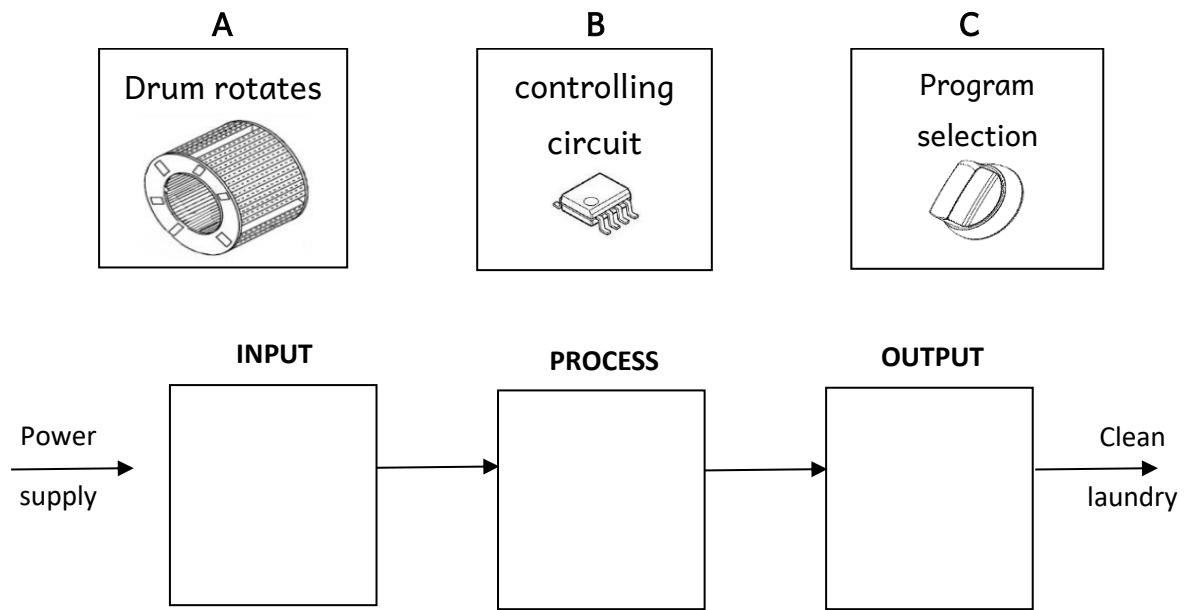


Figure 5

(2)

- c. Underline the correct phrase from the brackets:

i. The diagram shown in Figure 5 is called a (part list / system diagram / exploded view).

(1)

ii. The program selection of the washing machine shown in Figure 5 is done by (turning a rotary switch / moving a relay switch / pressing a foot pedal).

(1)

- d. Sketch and label a solution to make the washing machine door shown in Figure 6 easy to open for users:

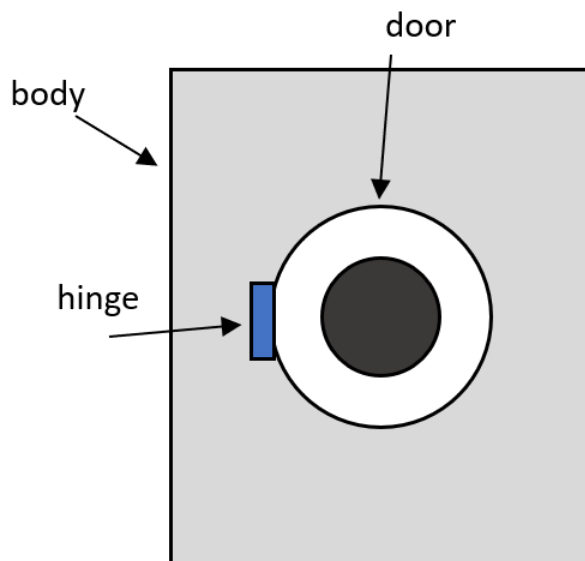
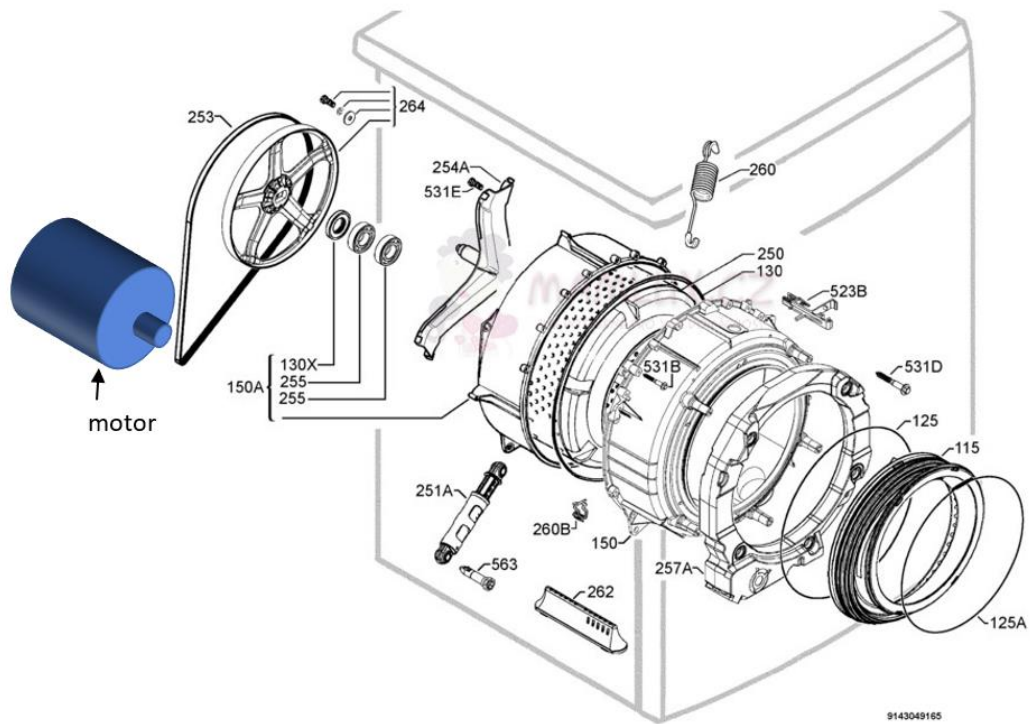


Figure 6

(2)

- e. Figure 7 shows some of the internal parts of the washing machine. On Figure 7, label the following **TWO** parts:
- i. pulley
 - ii. belt



(2)

Figure 7

Total: 10 marks

End of paper. Check your work again.