Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 3_Conservation Of Energy

Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

This question is about waves in the electromagnetic (e.m.) spectrum.

(i) A microwave oven uses waves of frequency 2.45 GHz.

Calculate the wavelength of the microwaves.
The velocity of light is 3.00×10^8 m/s.

(3)

wavelength = ... m

(ii) The microwave oven is 55% efficient and transfers 42 000 J of energy to some food when it is heated.

Calculate the total amount of energy that must be supplied to the oven.

(3)

energy supplied to oven = ... J

(Total for question = 6 marks)

Q2.

Some questions must be answered with a cross in a box (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Which statement describes conservation of energy in a closed system?

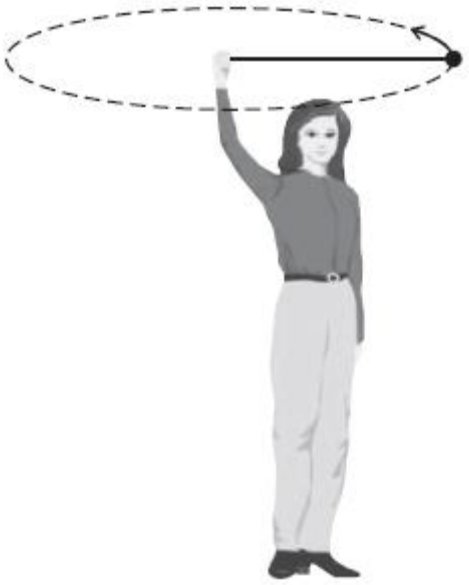
(1)

- ☐ **A** when there are energy transfers, the total energy reduces
- ☐ **B** when there are energy transfers, the total energy does not change
- ☐ **C** when there are no energy transfers, the total energy reduces
- ☐ **D** when there are no energy transfers, the total energy increases

(Total for question = 1 mark)

Q3.

(a) The diagram shows a girl swinging a rubber ball in a horizontal circle above her head.



(i) In which direction does the resultant force act on the ball?
Put a cross (☒) in the box next to your answer.

(1)

- ☒ **A** away from the centre of the circle
- ☒ **B** in the direction of the arrow on the diagram
- ☒ **C** in the opposite direction to the arrow on the diagram
- ☒ **D** towards the centre of the circle

(ii) State the name of the resultant force acting on the ball.

(1)

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(iii) Suggest what would happen to the ball as the girl gets tired.

(2)

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(iv) The girl lets go of the string and the ball hits a wall.
The collision is not elastic.
Explain what happens to both momentum and kinetic energy when the ball hits the wall.

(2)

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*(b) Describe a cyclotron and how charged particles move inside it.

You may draw a labelled diagram to help with your answer.

(6)

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(Total for Question = 12 marks)