Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: GCSE Triple Science_Electricity (High Demand Questions)

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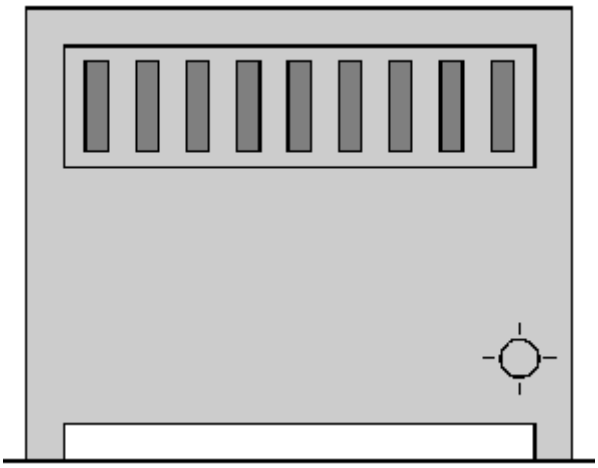
Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Q1.

(a) The diagram shows a fan heater.



(i) A current of 11A flows when the fan heater is working normally.
Fuses of value 3A, 5A, 10A and 13A are available.
Which one should be used in the plug of the fan heater?

_____

(1)

(ii) A fault caused a much higher than normal current to flow in the heater.
Describe what happened to the wire in the fuse.

_____

_____

_____

_____

(2)

(b)

You may find this equation useful when answering this part of the question
energy transferred (kWh) = power (kilowatt, kW) × time (hour, h)

(i) The power of the fan heater is 2.75 kW.
Calculate how many kilowatt hours of energy are transferred when the fan heater is used

for 6 hours.

_____

_____

_____

Number of kilowatt hours _____

(2)

(ii) How much will it cost to use the fan heater for 6 hours if one Unit of electricity costs 7p?

_____

_____

Cost _____ p

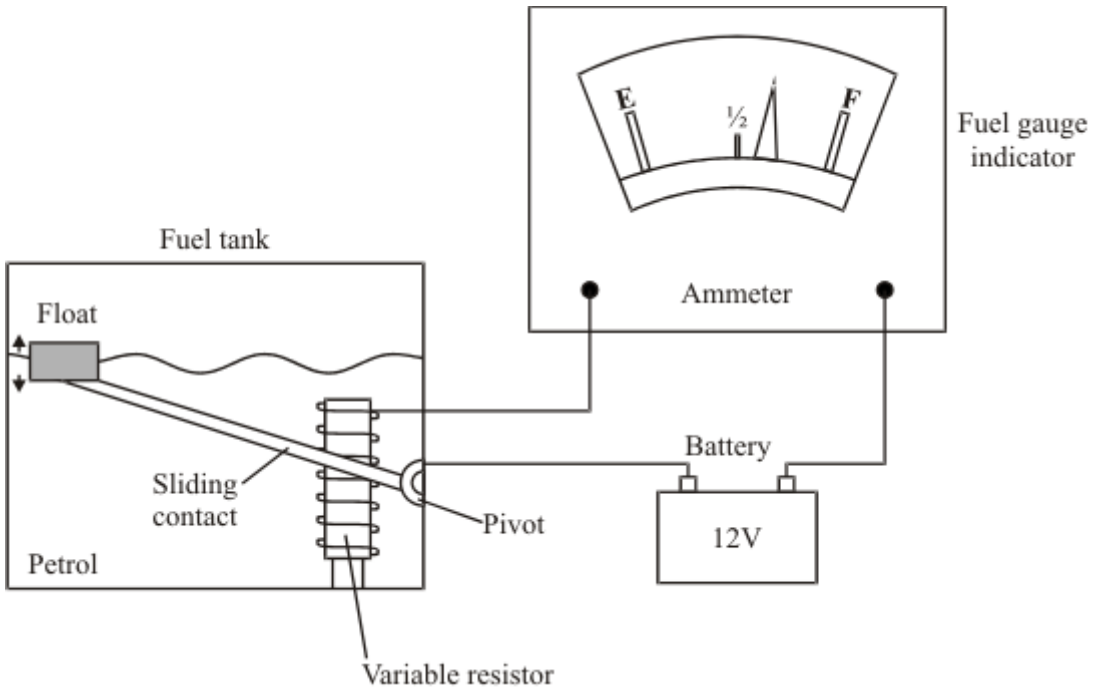
(2)

(Total 7 marks)

Q2.

The diagram shows the fuel gauge assembly in a car.

- The sliding contact touches a coil of wire and moves over it.
- The sliding contact and the coil form a variable resistor.
- The sliding contact is connected to a float via a pivot.
- The fuel gauge indicator is an ammeter.
- When the petrol level changes, the resistance of the circuit changes.
- This causes the pointer in the fuel gauge indicator to move.



(a) Use standard symbols to draw a circuit diagram for the fuel gauge assembly.

(3)

(b) How will the current in the circuit change as the level of petrol in the tank falls?

_____

Explain the reason for your answer.

_____

_____

_____

(2)
(Total 5 marks)

Q3.

The following specification is taken from the instruction booklet of a combination microwave oven.

AC voltage	240 V 50 Hz
Power required	
Microwave	1.5 kW
Dual (Roast/Bake)	2.8 kW
Dual (Grill)	2.5 kW
Convection	1.35 kW

Grill	2.3 kW
Output power	
Microwave	850 W
Convection heater	1350 W
Grill heater	1000 W
Microwave frequency	2450 MHz

(a) (i) What is the current when the oven is being used to cook in the dual (roast/bake) mode? Show clearly how you work out your answer.

_____

_____

Current = _____ A

(2)

(ii) Calculate the resistance of this combination microwave oven when it is being used in the dual (roast/bake) mode. Show clearly how you work out your answer and give the units.

_____

_____

_____

Resistance = _____

(3)

(b) What is the percentage efficiency of the oven when it is working in the microwave mode?

_____

_____

_____

Percentage efficiency = _____ %

(2)

(Total 7 marks)

Q4.

(a) The student is using a microphone connected to a cathode ray oscilloscope (CRO).

The CRO displays the sound waves as waves on its screen. What does the microphone do?

_____

_____

_____

(2)

(b) The amplitude, the frequency and the wavelength of a sound wave can each be either increased or decreased.

(i) What change, or changes, would make the sound quieter?

_____

(1)

(ii) What change, or changes, would make the sound higher in pitch?

_____

(1)

(Total 4 marks)