

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Q1.

There are many forms of energy. Some of these forms of energy can be “stored” ready to be used when the energy is needed. The chemical energy in fuels is one example of stored energy.

- (a) Complete the following sentences by adding the missing words.

The chemical energy in fuels such as coal came originally from the _____ .

Energy from fuels can be used to _____ .

(2)

- (b) An electric milk float has its batteries charged up overnight. Early in the morning the milkman sets off on his round. Describe the energy transfers which take place in the milk float as the milkman does his rounds.

(4)

- (c) Give another example of energy other than fuels which can be classed as “stored” energy. Give a use of the “stored” energy.

Type of “stored” energy _____

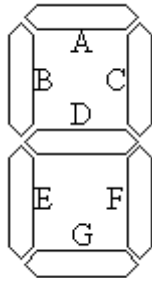
Use _____

(2)

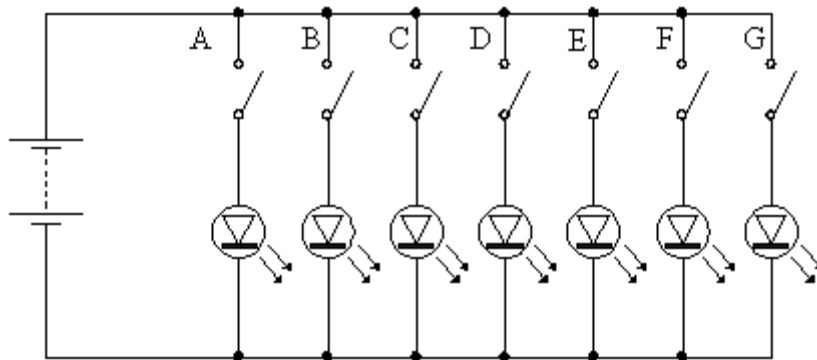
(Total 8 marks)

Q2.

Some electronic calculators use light emitting diodes (LEDs) to display numbers. Each number in a display consists of up to seven LEDs. The LEDs are arranged as shown in the diagram below. The different numbers are formed by switching different LEDs on at the same time. The LEDs are labelled A to G.



A simplified circuit to provide power to the LEDs is shown below.



- (a) Explain why each LED has its own switch.

(2)

- (b) What number is displayed when all switches except E are closed?

(1)

- (c) Which switches would be open if the number 3 is to be displayed?

(1)

- (d) Which of the numbers 0 to 9 draws least current from the battery? Explain your answer.

Number _____

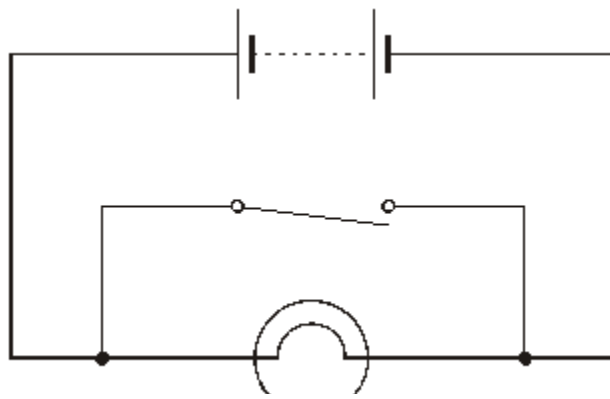
Explanation _____

(2)

(Total 6 marks)

Q3.

The circuit diagram below shows a battery connected to a lamp and a switch.



(a) State what happens to the lamp when:

(i) the switch is open (OFF);

(ii) the switch is closed (ON).

(2)

(b) When the switch is closed what problem is caused in the circuit?

(1)

(c) In the space below draw a circuit diagram to show how the switch should be correctly connected to the lamp and battery.

(1)

(Total 4 marks)