SYSTEMS QUESTIONS

Question 1

2007 General Paper

A CD player is shown below.

(*a*) Complete the diagram below for the CD player by adding one **main** input and one **main** output. One input has been provided for you.

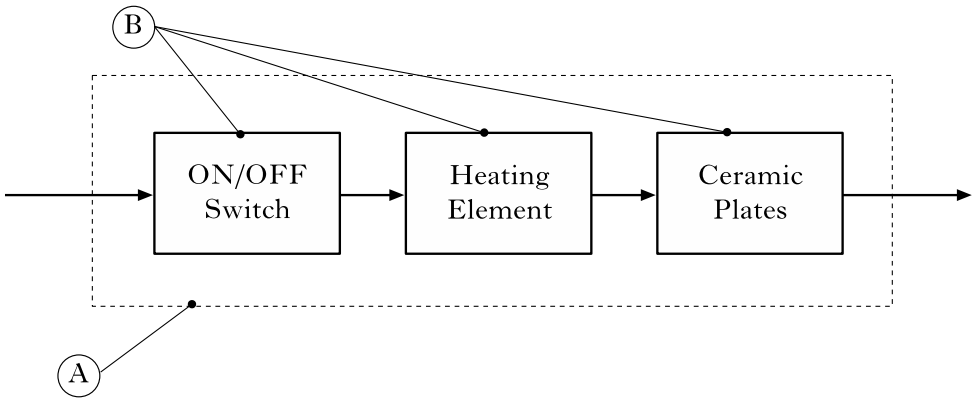
Question 2

2008 General Paper

Hair straighteners are shown below.

(*a*) Complete the system diagram below for the hair straighteners by adding one main input **energy** and one main output **energy**.

(*b*) The main parts of the hair straighteners are shown below.



(i) (A) separates the system from the outside world.
State the name of this part of the diagram.

_____

(ii) The whole system can be broken down into several parts labelled above as (B).
State the name given to these parts.

_____

Question 3

2009 General Paper

A hand held games console is shown.

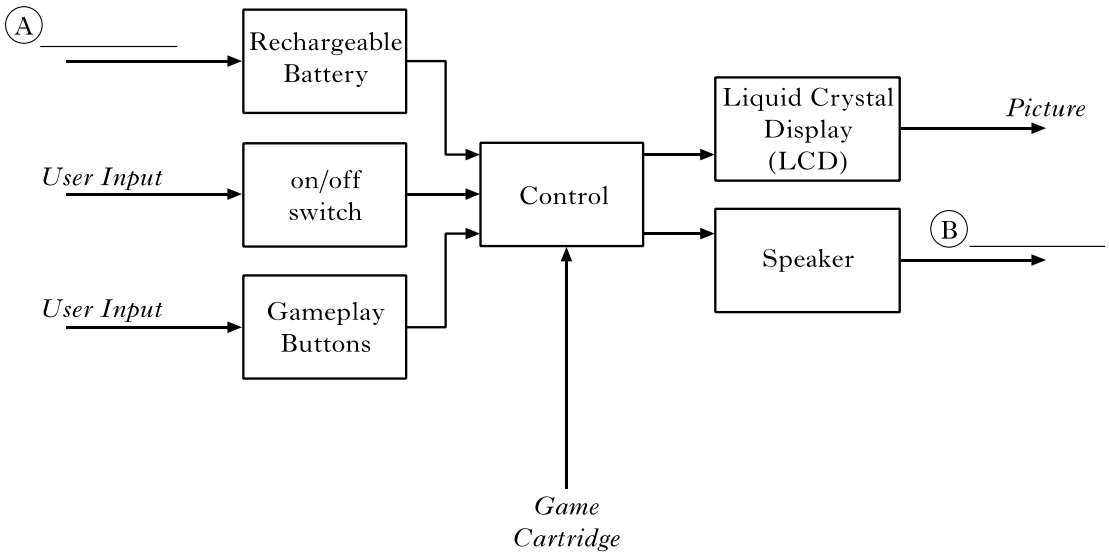
A simplified diagram of the main parts of the games console is shown below.

(*a*) Complete the diagram by adding:

(i) the missing input (A);

(ii) output (B);

(iii) the system boundary.



(*b*) The system consists of six parts shown above.

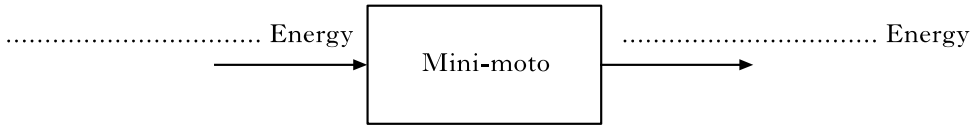
These parts of the system are called _____

Question 4

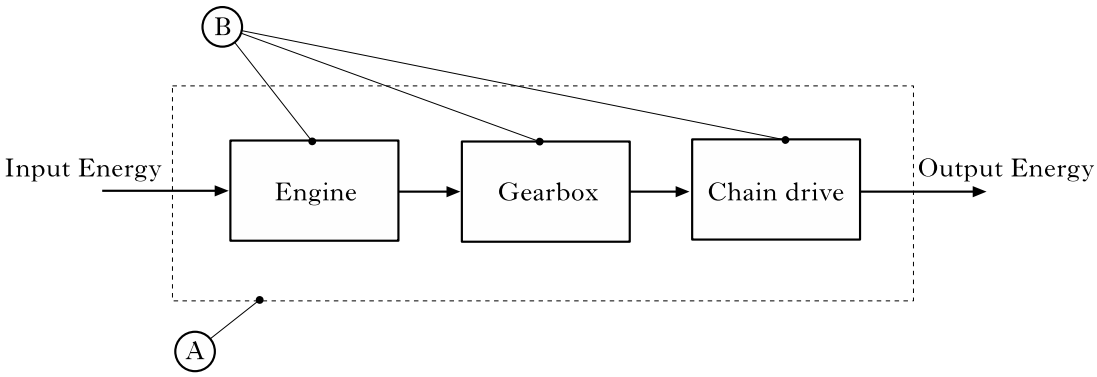
2010 General Paper

A petrol driven mini-moto is shown below.

(*a*) Complete the system diagram below for the mini-moto by adding the main input **energy** and the main output **energy**.



(*b*) The main parts of a mini-moto drive system are shown in the diagram below.



(i) (A) separates the system from the outside world.

State the name of this part of the diagram.

_____

(ii) The whole system can be broken down into several parts labelled above as (B).

State the name given to these parts.

_____

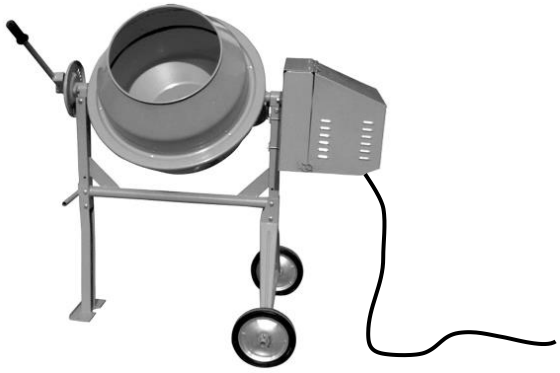
Question 5

2011 General Paper

The systems approach is used to analyse problems.

(*a*) Draw the Universal System Diagram.

An **electric** cement mixer is shown below.



(*b*) Draw a **system diagram** below for the electric cement mixer. Include one main input and one main output **energy**.

Question 6

2007 Credit Paper

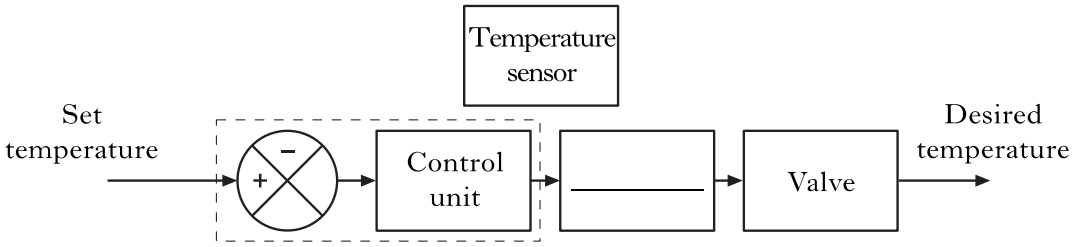
The temperature of a steam room in a leisure centre is controlled automatically.

A valve opens to release steam when the temperature is below the set level. When the temperature of the room is hot enough, the valve is closed.

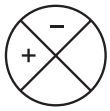
(*a*) State the type of control produced by this automatic system.

_____

(*b*) Complete the control diagram for this system.



(*c*) State the name of the control diagram symbol shown below.



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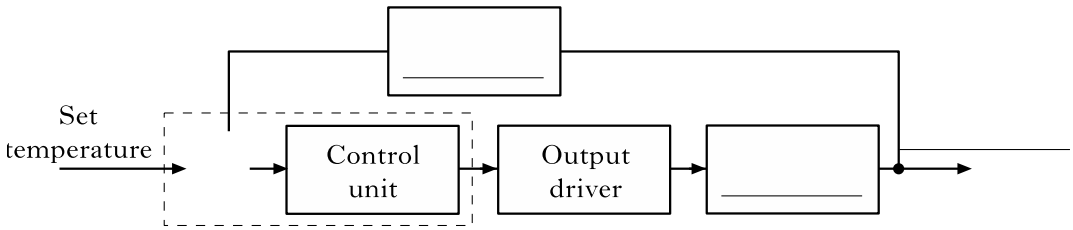
Question 7

2008 Credit Paper

An air conditioning system is operated by closed loop control.

(*a*) Complete the **control** diagram below.



(*b*) State a suitable electronic component which could be used for the output driver sub-system.

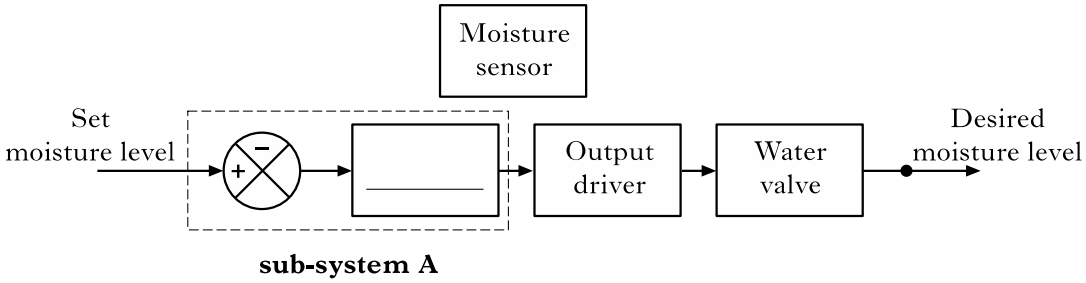
_____

Question 8

2009 Credit Paper

The moisture level in a greenhouse is controlled automatically.

(*a*) Complete the **control** diagram below.



(*b*) State the type of control produced by this automatic system.

_____

(*c*) State a suitable electronic device which could be used for the output driver sub-system.

_____

(*d*) Describe the operation of **sub-system A**.

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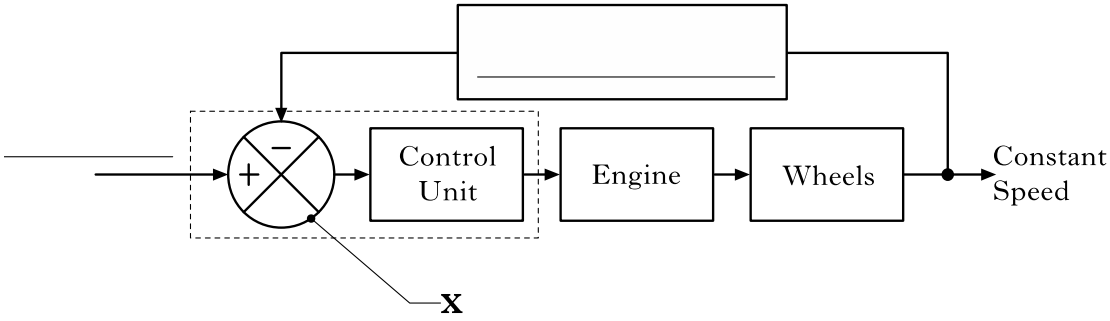
Question 9

2010 Credit Paper

A manufacturer wants to use a cruise control system to keep a car's speed constant even when it goes up and down hills. The system should allow a driver to take their foot off the accelerator once the desired speed has been set.

(*a*) Complete the **control** diagram below for the cruise control system.



(*b*) State the name of the control diagram symbol **X**.

_____

(*c*) This control system makes use of a feedback loop. State the type of control produced by this automatic system.

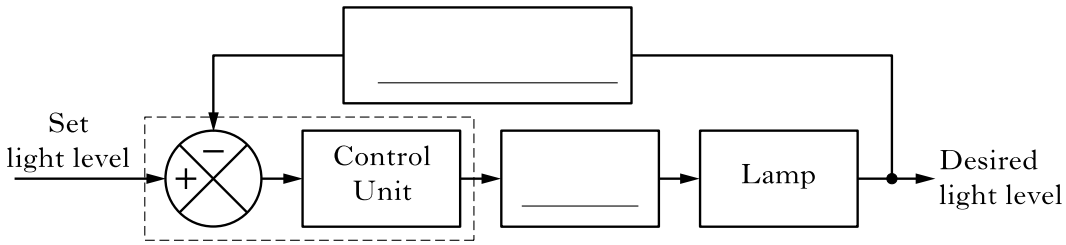
_____

Question 10

2011 Credit Paper

A street lighting system is controlled automatically. When the outside light drops below a set level a lamp comes on.

(*a*) Complete the diagram below.



(*b*) State the name of this type of diagram.

_____

(*c*) Describe the function of an error detector.

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