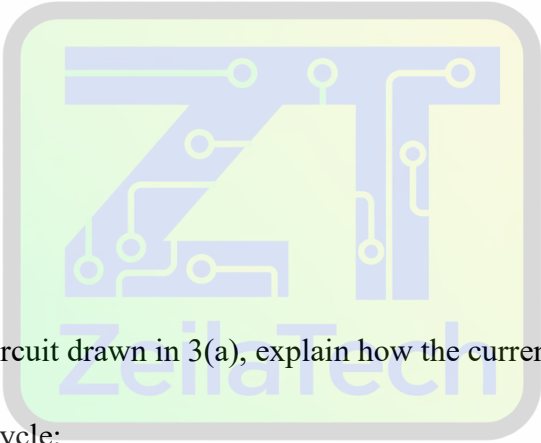


(c) A 230V to 12V bell transformer is constructed with 800 turns on the primary winding. Calculate the number of secondary turns and the primary and secondary currents when the transformer supplies a 12V, 12W alarm bell.

[6 marks]

3. (a) Draw a full wave bridge rectifier circuit.



(b) With the aid of the circuit drawn in 3(a), explain how the current flows through the diode during the:

(i) positive half cycle;

[4 marks]

(ii) negative half cycle;

[6 marks]

4. (a) Mention any four methods of generating electrical power.

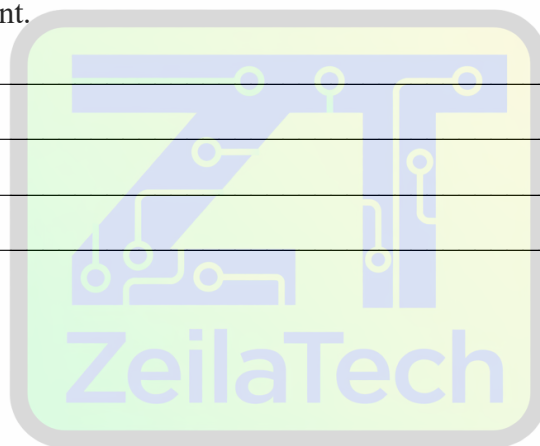
[4 marks]

(b) An electric heater consumes 2.7 MJ when connected to 230V supply for 30 mins. Calculate the:

(i) Power rating of the heater;

(ii) Supply current.

[6 marks]



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PART II

Answer two questions only from this section.

All questions carry equal marks

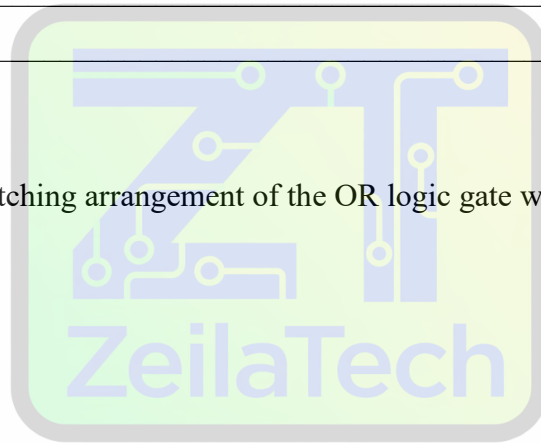
5. (a) Convert the following numerals:

(i) 11001_2 to decimal;

(ii) 25_{10} to binary

[4 marks]

(b) (i) Draw the switching arrangement of the OR logic gate with two inputs.



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[3 marks]

(iii) Draw the truth table for two – input OR gate.

[3 marks]

6. (a) Draw a labelled symbol for each of the following Field Effect Transistors (FET)

(i) N- channel;

(ii) P- channel.

[6 marks]

(b) State two:

(i) applications of Field Effect Transistors;

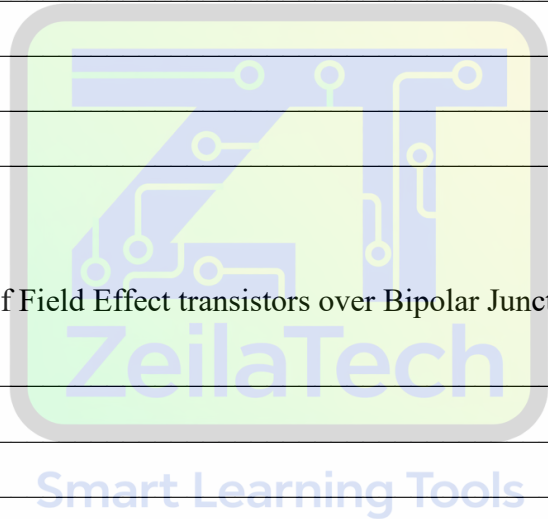
[2 marks]

(ii) advantages of Field Effect transistors over Bipolar Junction Transistors

[2 marks]

7. a) Explain the following terms:

i. Primary cells



ii. Secondary cells

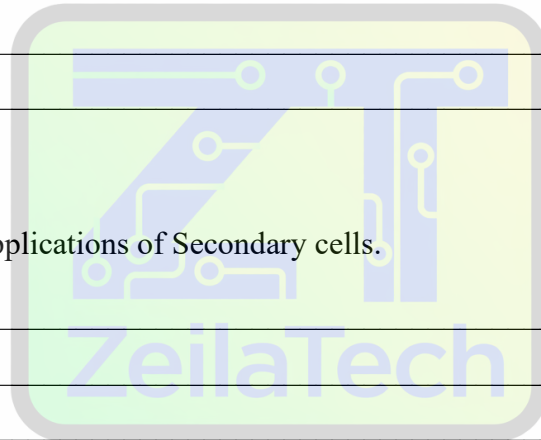
[4 marks]

b) State **three** differences between Primary and Secondary cells.

[3 marks]

c) Mention any **three** applications of Secondary cells.

[3 marks]



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END OF PAPER