

- b) Referring to the pattern in Figure (1). Given that the vertical frequency is 100 Hz, determine the horizontal frequency.

The Fifth Question (20- Marks)

- a) Explain the main performance parameters of (DVMs).
- b) Find the successive approximation A/D output for a 8-bit converter to a 7.65 volt input voltage if the reference voltage is 10 volts.

The Sixth Question (20- Marks)

- a) What is the difference between Sensor and Transducer
- b) Explain the difference between RTD and thermocouple techniques.
- c) A resistive strain gauge with a gauge factor of 2 is fastened to a steel member, which is subjected to strain of 1×10^{-6} . If the original resistance value of the gauge is 130Ω , calculate the change in resistance.
- d) An ac LVDT has the following data: input 6.3V, output $\pm 5.2V$, range ± 0.50 inch. Determine:
- 1- The plot of the output voltage versus core position for a core movement going from +0.45 inch to -0.03 inch.
 - 2- The output voltage when the core is -0.25 inch from center.

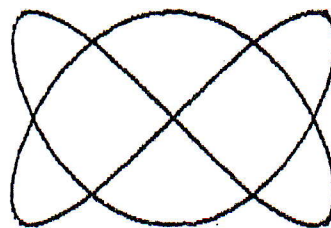


Figure (1)

With best wishes