

January 2026

**VARMA ITI KOLLEGAL**

Answer Key

**Duration: 30 Mins****Total Marks: 12****Q.ID: ITISKILL7500UI**

1. What is the percentage of charge accumulated by the capacitor at the end of 2 time constant limit?

- A) 0.632                      B) 0.864  
C) 0.5                         D) 0.4

**Answer: B) 0.864**

2. What is the resonant frequency range of a crystal?

- A) Between 0.5 and 25 MHz    B) Between 0.1 and 10 MHz  
C) Between 0.5 and 30 MHz    D) Between 0.1 and 1MHz

**Answer: C) Between 0.5 and 30 MHz**

3. Which circuits commonly use parallel-fed Hartley oscillators?

- A) Radio receivers                B) Television receivers  
C) Automatic voltage stabilizers    D) Stereo amplifiers

**Answer: A) Radio receivers**

4. How many time constant period is required to fully charge a capacitor?

- A) 7 time constants                B) 10 time constants  
C) 3 time constants                D) 5 time constants

**Answer: D) 5 time constants**

5. How to improve the frequency stability in oscillator circuits?

- A) Using L and C                    B) Increase the supply voltage  
C) Improve the property of circuits    D) By using quartz crystal

**Answer: D) By using quartz crystal**

6. Which circuit is determined by the frequency of LC tank circuit?

- A) Multiplexed                      B) Oscillator  
C) Amplifier                         D) Demodulator

**Answer: B) Oscillator**

7. How many time constants required to change a capacitor

to 63.2% of its full charge voltage?

- A) One time constant                B) Three time constant  
C) Two time constant                D) Four time constant

**Answer: A) One time constant**

8. Why LC tuned circuits are not used in audio frequency oscillators?

- A) LC tank circuit operation requires high voltage    B) LC tank circuit does not produce AF signals  
C) LC values required is too large    D) LC components are not available

**Answer: C) LC values required is too large**

9. What is the difference of Colpitts oscillator compare to Hartley oscillator?

- A) Uses split inductor                B) Uses split capacitor  
C) Uses SCR combination                D) Uses crystal oscillator

**Answer: B) Uses split capacitor**

10. What is the natural shape of a quartz crystal?

- A) Pentagonal prism with pyramid at ends    B) Cube shape with pyramid at ends  
C) Cylindrical shape with pyramid at ends    D) Hexagonal prism with pyramid at ends

**Answer: D) Hexagonal prism with pyramid at ends**

11. What type of feed back is used by the Wein-bridge oscillator to oscillate the signal?

- A) Negative feedback                B) Both positive and negative feedback  
C) Positive feedback                D) No feedback

**Answer: B) Both positive and negative feedback**

12. What type of arrangement is required to sustain the oscillations of the oscillator circuit?

- A) Provide negative feedback    B) Provide regenerative feedback  
C) Increase the value of inductor    D) Increase the bias voltage

**Answer: B) Provide regenerative feedback**