FAR-WESTERN UNIVERSITY
End-Term Examination-2076
Electronic Principles (CSIT.114)

Faculty: Science and Technology (CSIT)
Level: Undergraduate
Semester: First

Full Marks: 80
Time: 2hrs.40minutes

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate *full marks.*

Group - B

Attempt any six questions. **6×8 = 48**

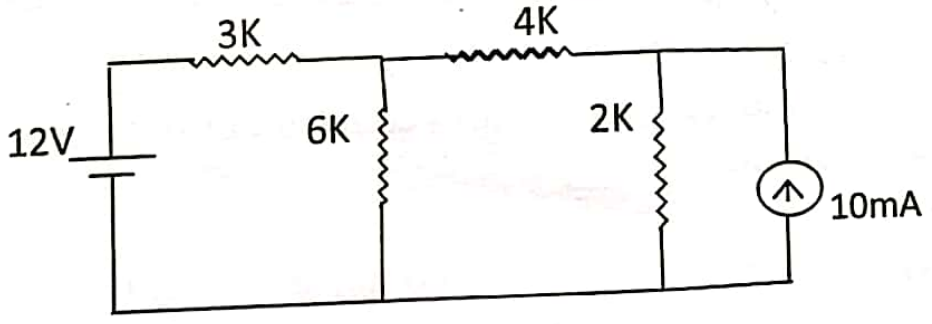
1. *Distinguish between an avalanche and a Zener effects. Discuss Zener diode as a voltage regulator.*
2. *Define oscillator. Explain the working of a Hartley oscillator.*
3. *Discuss characteristic of DE-MOSEFET with proper theory and circuit.*
4. *Differentiate between unregulated and regulated power supply. Explain working of shunt regulators.*
5. Define positive feedback and negative feedback amplifier. Derive the relation of closed loop gain for negative feedback amplifier.
6. Show that operational amplifier act as adder circuit.
7. Explain the action of FET as switch.
8. What is rectifier? Explain the use of a P-N junction diode as bridge wave rectifier.

Group - C

Attempt any two questions. **2×16 = 32**

9. (a) Draw a diagram of two stage direct couple amplifier and show that in two stage direct couple amplifier the total voltage gain is equal to the voltage gain of second transistor. **10**

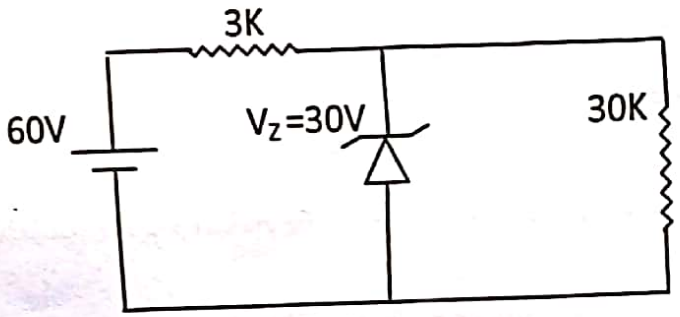
   (b) Using Thevenin's theorem, calculate the current through the 4k resistor of given figure. **6**



P.T.O.

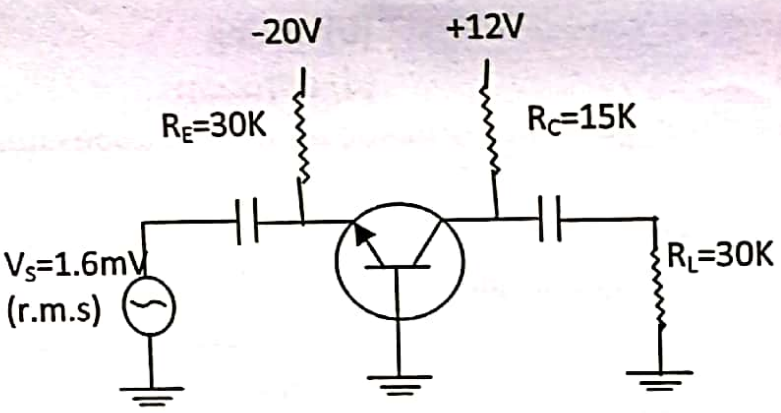
10. (a) Discuss common emitter characteristics with proper theory and circuit for a NPN transitor. **10**

(b) Using ideal zener diode approximation. Find current through the diode, when load resistance R_L is 30k. **6**



11. (a) Draw a circuit diagram of atypical common emitter amplifier and hence obtain voltage gain of the amplifier. Why there is phase inversion between input and output signal. **10**

(b) For the common base amplifier circuit shown in figure. Find voltage gain. (Taking V_{BE}=0.7V) **6**



***