

Code No.: EC301PC

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**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**  
**II-B.TECH-I-Semester End Examinations (Supply) - June- 2022**  
**ELECTRONIC DEVICES AND CIRCUITS**  
**(ECE)**

[Time: 3 Hours]

[Max. Marks: 70]

- Note:** 1. Answer any FIVE questions. Each question carries 14 marks.  
2. All questions carry equal marks.  
3. Illustrate your answers with NEAT sketches wherever necessary.

5X14=70

1. a) Explain about the PN junction diode. [7M]  
b) Write about the operation of HWR with inductive filter. [7M]
2. a) Explain input and output characteristics of a transistor in CB configuration with neat sketches. [7M]  
b) Explain about DC load line. [7M]
3. a) Explain about the V-I characteristics of Zener diode. [7M]  
b) Explain how FET acts as voltage variable resistor. [7M]
4. a) Draw the h-parameter equivalent circuit for a common emitter amplifier and derive the expression for  $A_v$ ,  $R_i$  and  $A_v$ . [7M]  
b) Explain about the effect of coupling and bypass capacitor on CE Amplifier. [7M]
5. a) Draw the circuit of CD amplifier and derive the expression for voltage gain at low frequencies. [7M]  
b) Draw and explain the V-I characteristics of depletion MOSFET. [7M]
6. a) Explain about the breakdown mechanisms in diodes. [7M]  
b) Write about the operation of FWR with neat sketches. [7M]
7. a) Explain input and output characteristics of common collector configuration. [7M]  
b) Write about the thermal runaway and thermal stability. [7M]
8. a) Explain about the construction and operation of JFET. [7M]  
b) Explain about the Photo diode. [7M]

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