

**2007 CALICUT UNIVERSITY**  
**III SEMESTER B.TECH COMPUTER SCIENCE & ENGINEERING**  
**BASIC ELECTRONIC ENGINEERING**

JUNE 2007

**TIME::3 HOUR**  
**MARK:100**

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ANSWER ANY TEN QUESTIONS QUESTIONS CARRY EQUAL MARKS

**MARKS [10\*10=100]**

1. What are the different types of resistors available? Draw their diagrams mention the range of their values.
2. What is the necessity of filter after rectifying ac supply? What are the various types of filters? Mention the load current each one can withstand.
3. Draw the small signal hybrid low frequency model of a bjt and write the pair of equations from which the model is derived.
4. Classify amplifiers according to the coupling and draw one circuit for each one of them.
5. What is amplified in a power amplifier? Draw a circuit and explain.
6. Derive the expression for voltage gain with negative feedback in terms of the one without feedback and comment .
7. Draw a voltage follower circuit using op-amp. Why it is called so ? list its merits.
8. What is zero crossing detector ? where is it used ? what is its drawback ? what is done to rectify this ?
9. Describe the theory of a PN-junction using band diagram and explain the change in the diagram for forward bias.
10. Explain the construction of ujt. Draw its emitter characteristics and explain mention the applications of ujt.
11. Analyze a CE amplifier using graphical analysis. Explain the DC and AC load lines. What is the role played by each in design.
12. Draw the frequency response of a single. Stage RC coupled amplifier and explain for its different slopes with equivalent circuits for each one of the slopes.
13. What are the four types of navigation feedback? Give block diagram for each of the m. explain how their impedance levels get modified due to feedback.
14. What is a multivibrator? How is a astable multivibrator built using a pair of transistor? Draw circuit diagram and derive expression its frequency.
15. Draw the circuit of an inverting amplifier using op-amp and derive expressions for it 1.Voltage gain and 2. Input resistance with a finite differential input resistance  $R_{id}$ .
16. Explain the application of op-amp as 1.peak detector and 2.differential amplifier.

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