

Code No: R22043

R10**SET - 1****II B. Tech II Semester Supplementary Examinations, November-2017****ELECTRONIC CIRCUIT ANALYSIS**

(Com. to ECE, EIE)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
~~~~~

1. a) Discuss different Biasing methods used for FET? (8M)  
b) Draw the FET small signal model and Explain. (7M)
2. a) Draw the voltage series feedback amplifiers with discrete components and derive for its gain, input impedance and output impedance. (8M)  
b) An amplifier has voltage gain with feedback of 200. If the gain without feedback changes by 20% and the gain with feedback should not vary more than 3%, determine the values of open loop gain  $A$  and feedback ratio  $\beta$  (7M)
3. a) Draw the Wein bridge oscillator and derive for the frequency of oscillations (8M)  
b) Discuss about the frequency stability of oscillators (7M)
4. a) Give the complete analysis of RC coupled CE amplifier (8M)  
b) Draw the Darlington pair amplifier and give its analysis (7M)
5. a) Derive expression for CE Short Circuit Current Gain with neat circuit (8M)  
b) Draw and explain about Emitter follower at High frequencies (7M)
6. a) Derive expression for the efficiency of a class-B power amplifier with neat graphs (8M)  
b) Draw the push-pull class B amplifier and explain; what are its advantages? (7M)
7. a) Discuss the effect of cascading single tuned amplifiers on bandwidth (8M)  
b) What is stagger tuning? Discuss about stability of tuned amplifiers (7M)
8. a) Design a series voltage regulator with the following specifications: (8M)  
 $V_O = 20V$ ,  $V_{in} = (22 \text{ to } 30)V$ ,  $I_L = 50 \text{ mA}$   
b) Write a short note on Overload Voltage protection (7M)