

Paper ID [EE204]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 4th)

APPLIED ELECTRONICS (EE - 204)

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1) (10 × 2 = 20)

- a) Why is it necessary to draw ac load line for calculating the voltage gain of an amplifier?
- b) Why are h-parameters called small signal parameters?
- c) What is the effect of bypass capacitor on the voltage gain of an amplifier?
- d) Define loading effect in a multistage transistor amplifier.
- e) What are the disadvantages of direct coupled amplifier?
- f) Define thermal runaway condition for a power amplifier.
- g) How is distortion minimized in power amplifiers?
- h) What is the difference between oscillator and an alternator?
- i) What is the difference between line and load regulation?
- j) What is the basic principle of working of switching regulators?

Section - B

(4 × 5 = 20)

- Q2)** Explain why CE configuration is most popular in amplifier circuits.
- Q3)** Discuss the application of Miller's theorem to BJT amplifiers.

- Q4)** Derive the expression for conversion efficiency of a transformer coupled class A amplifier. How does this maximum value compare with that of class B amplifier?
- Q5)** Discuss the working of Wein bridge oscillator. Define its frequency of oscillation.
- Q6)** Define voltage regulation. How is current limiting achieved in transistor series voltage regulator?

Section - C

(2 × 10 = 20)

- Q7)** Draw the ac equivalent circuit of CE transistor amplifier and derive the expression for voltage gain, current gain, input impedance and output impedance of the amplifier in terms of h-parameters.
- Q8)** (a) What is the utility of phase inverter in power amplifier circuits?
(b) Describe the working of complimentary symmetry push-pull amplifier circuit.
- Q9)** Write short notes on the following :
- (a) High frequency T model.
(b) Crystal oscillator.

