

Exam. Code: 0927

Sub. Code: 6575

2074

B.E. (Electronics and Communication Engineering)

3rd Semester

EC-307: Electronics Devices and Circuits

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

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I. Attempt the following: -

- (a) What is Thermal Runaway and how do we control it?
- (b) Draw the I/P and O/P characteristics of CB transistor.
- (c) Mention the advantages of FET's over BJT's.
- (d) What is Barkhausen criterion of oscillation?
- (e) How the effect of harmonics be reduced in power amplifiers?

(5×2)

UNIT-I

II. Derive the expression for stability factor for CE voltages divider biased CRT.

(10)

III. Evaluate the voltage gain and current gain of CB transistor amplifier in terms of h-parameters.

(10)

IV. (a) Explain the working and transfer characteristic curve of N-channel FET.

(b) A JFET has a drain current of 5mA. If $I_{DSS} = 10mA$ and $V_{GS(off)} = -6V$. Find the value of V_{GS} and V_p .

(7+3)

UNIT-II

V. What are cascade circuits? Analyze the BJT cascade amplifier circuit.

(10)

VI. Explain the working of Hartley Oscillator. Also derive its expression for frequency of oscillations.

(10)

VII. (a) What are class B power amplifiers? Derive an expression for efficiency of Class B power amplifier.

(b) Explain the working of complementary symmetry push-pull amplifier.

(5+5)

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