Code No: R1622041   **R16**   SET - 1

II B. Tech II Semester Supplementary Examinations, November - 2018
ELECTRONIC CIRCUIT ANALYSIS
(Com to ECE, EIE)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) Explain why RC Phase shift oscillators are not used at high frequencies. (3M)

    b) Which configuration is the best in cascade for an output stage and for an intermediate stage? (2M)

    c) Explain characteristics of negative feedback amplifiers. (2M)

    d) Derive the expression for overall gain of a negative feedback circuit. (2M)

    e) Derive the expression for harmonic distortion. (2M)

    f) Differentiate staggered tuned amplifiers and wideband amplifiers. (3M)

PART -B

2. a) Find the voltage gain, input and output resistances of a emitter follower at high frequencies. (14M)

3. a) Differentiate between direct and capacitive coupling of multiple stages of amplifiers. With the help of a neat circuit diagram, describe the working of a cascade amplifier. (7M)

    b) Draw the circuit diagram, equivalent circuit of a Darlington pair and derive expressions for overall voltage gain and input impedance. (7M)

4. a) An amplifier has a gain of 50 with negative feedback. For a specified output voltage, if the input required is 0.1V without feedback and 0.8V with feedback, Compute β and open loop gain. (7M)

    b) Through the block schematics, show four types of negative feedback in amplifiers. (7M)

5. a) Derive the condition for oscillations? Discuss. (7M)

    b) Draw the RC-phase shift oscillator and derive the condition for oscillations. (7M)

6. a) Write short notes on Thermal stability and Heat sinks. (7M)

    b) VCE(max)=15V,VCE(min)=1V,find the overall efficiency for (i) series –fed load (ii) transformer-coupled load (7M)

7. a) Draw the diagram of a capacitance coupled tuned amplifier and derive an expression for its quality factor. (7M)

    b) Show that Bandwidth decreases with cascading of single tuned amplifiers. (7M)