

(DEC 312)

**B.Tech. DEGREE EXAMINATION, MAY - 2015**

**(Examination at the end of Third Year)**

**ELECTRONICS & COMMUNICATIONS**

**Paper - II : Electronic Circuits - II**

**Time : 3 Hours**

**Maximum Marks : 75**

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*Answer question No.1 compulsory*

*(15)*

*Answer ONE question from each unit*

*(4 × 15 = 60)*

- 1) a) Define efficiency of power amplifier.
- b) What are the advantages of Colpitt's oscillator?
- c) What are characteristics of negative feed back amplifier?
- d) List out temperature considerations in power amplifiers.
- e) What are characteristics Crystal Oscillators?
- f) Compare Class B and class AB amplifiers.
- g) List out the applications UPS.
- h) What is chopper amplifier?
- i) Define barkhausen criterion.

**UNIT - I**

- 2) a) Explain the complementary symmetry power amplifier, with neat diagram.
- b) Explain the classification of power amplifiers based on class of operation and compare them.

OR

- 3) a) What is the drawback of class-B amplifier? How it is going to overcome using Class - AB amplifier with neat diagram.
- b) Explain Harmonic distortion in power amplifiers.

## UNIT - II

- 4) a) With necessary diagram explain about the different feedback techniques in amplifiers.
- b) Draw the equivalent circuit of current amplifier with current shunt feedback and derive the expression for input resistance with feedback.

OR

- 5) a) Derive an expression for frequency of oscillation of Hartley oscillator.
- b) Explain the advantages and disadvantages of negative feedback.

## UNIT - III

- 6) a) Derive the expression for bandwidth in terms of resonant frequency and quality factor in case of Double tuned amplifiers.
- b) Classify the tuned amplifier? Explain the limitations tuned amplifiers.

OR

- 7) a) Write short note on the following :
- i) Balanced chopper.
- ii) FET as chopper.
- b) Explain in detail how transistor act as chopper switch.

## UNIT - IV

- 8) a) Explain function of SMPS with neat sketch.
- b) Describe different protection techniques used in voltage regulators.

OR

- 9) a) Design and explain shunt voltage regulator with transistor.
- b) List out the applications UPS.

