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Code No. : 14306 O2

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (EEE) II Year II-Semester Old Examinations, May-2018

Electronics Engineering-II

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

1. Draw the generalized feedback circuit.
2. Compare the characteristics of Voltage Series and Shunt feedback amplifiers.
3. Briefly explain about Crystal oscillator.
4. Mention the advantages of Wein Bridge Oscillator.
5. A differential amplifier has $A_d = 100$ and $A_c = 0.01$. Calculate its CMRR in dB.
6. Mention the methods to improve CMRR of differential amplifier.
7. Why a Class-A power amplifier is cooler in the presence of signal than in the absence of signal.
8. Specify the advantages and disadvantages of Class B push pull amplifier.
9. What are the applications of Clipping and Clamping circuits?
10. Define transmission error.

Part-B (5 × 10 = 50 Marks)

11. a) Draw the block diagram of current series feedback amplifier and determine A_{vf} , R_{if} and R_{of} of the given amplifier. [7]
b) The gain of an amplifier is decreased to 1000 with negative feedback from its gain of 5000, calculate the feedback factor and the amount of negative feedback in dBs. [3]
12. a) Derive the expression for f_{fe} of Hartley Oscillator and its frequency of oscillations with the help of neat diagram. [6]
b) Find C and f_{fe} of a transistor to provide f_o of 40 kHz of a RC transistorized phase shift oscillator. Given $R_1 = 22 \text{ k}\Omega$, $R_2 = 68 \text{ k}\Omega$, $R_C = 20 \text{ k}\Omega$, $R = 6.8 \text{ k}\Omega$ and $h_{ie} = 2 \text{ k}\Omega$. [4]
13. a) Draw the circuit diagram of Difference Amplifier and explain its operation. [5]
b) Illustrate the various drift compensation techniques. [5]
14. a) Discuss in detail various types of distortions in amplifiers [5]
b) Show that output of a push pull amplifier does not contain even harmonics. [5]
15. a) Draw a high pass circuit. Explain its response to square wave input. [5]
b) Illustrate the concept of Clamping circuit using Diodes. [5]
16. a) Sketch the block diagram of feedback amplifier and explain in detail. [5]
b) Derive the expression for frequency of oscillation in a colpitt's oscillator. [5]
17. Answer any *two* of the following:
a) Construct the block diagrams of four possible feedback amplifiers. Explain the same. [5]
b) Complementary symmetry push pull power amplifier merits and demerits. [5]
c) Obtain the step response of RC High pass filter with mathematical relations. [5]

