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Code No.: 14306

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**B.E. (EEE: CBCS) IV-Semester Main Examinations, May-2018**

**Electronic 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. Briefly explain the importance of cascading in amplifiers.
2. List out the features of differential amplifiers.
3. Mention the four types of negative feedback topologies.
4. Define sensitivity and desensitivity of gain in feedback amplifiers.
5. Explain the concept of positive feedback.
6. Draw the circuit diagram of colpitt's oscillator.
7. Classify different types of power amplifiers.
8. Define Harmonic distortion in power amplifiers.
9. Mention the significance of connecting a resistor across diode in clamping circuits.
10. Explain low pass circuit act as an integrator

**Part-B (5 × 10 = 50 Marks)**

11. a) Analyze the frequency response of RC coupled amplifier. [6]  
b) A differential amplifier has inputs  $V_1 = 7$  mV and  $V_2 = 9$  mV. It has a differential voltage gain of 80 dB and its CMRR is 90 dB. Calculate the output voltage. [4]
12. a) Draw the circuit diagram of voltage series feedback topology and derive expressions for input resistance and output resistance. [7]  
b) An amplifier has a gain 300. When a negative feedback is applied the gain is reduced to 240. Find the feedback ratio. [3]
13. a) Draw the circuit of Hartley oscillator and explain its working. Derive the expressions for frequency of oscillation. [7]  
b) A Crystal has  $L = 0.4$ ,  $C = 0.085$  pF and  $C_M = 1$  pF with  $R = 5$  k $\Omega$ . Find [3]  
i) Series resonance ii) Parallel resonance iii) Q-Factor.
14. a) Explain the operation of complementary symmetry power amplifier with neat diagram. [4]  
b) What is Class B power amplifier? Explain the operation and derive the expression for efficiency. [6]
15. a) Draw the output waveform of an RC High pass circuit for square wave input under different time constants. Derive the expression for percentage of tilt. [7]  
b) State and prove clamping circuit theorem. [3]
16. a) Discuss the significance of any two drift compensation techniques. [4]  
b) Illustrate the concept of feedback with block diagram. [6]
17. Answer any *two* of the following:  
a) Frequency stability of an oscillator. [5]  
b) Crossover distortion. [5]  
c) Operation of shunt clipper circuits. [5]

