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Question Paper Code : 90184

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019
Fourth Semester
EC8452 – ELECTRONIC CIRCUITS – II
(Common to Electronics and Communication Engineering/Electronics and
Telecommunication Engineering)
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Discuss the advantages of negative feedback in amplifiers.
2. A feedback amplifier has an open loop gain of 600 and feedback factor $\beta = 0.01$. Find the closed loop gain with feedback.
3. State the Barkhausen criterion for an oscillator.
4. If $L_1 = 1$ mH, $L_2 = 2$ mH and $C = 0.1$ nF, observe the frequency of oscillation for Hartley oscillator.
5. Mention two applications of tuned amplifiers.
6. Define loaded Q and unloaded Q of tuned circuit.
7. Describe a simple clamper circuit.
8. Outline the applications of astable multivibrator.
9. Which power amplifier gives minimum distortion ? Why ?
10. List the applications of MOSFET power amplifier.

PART – B

(5×13=65 Marks)

11. a) Illustrate the current series feedback connection and derive the expressions for gain, R_{if} and R_{of} .

(OR)

- b) i) Build the circuit diagram of voltage shunt feedback amplifier. (5)
- ii) Derive the expressions for R_{if} , R_{of} , current and voltage gain. (8)



12. a) Explain the operation of Wien bridge oscillator with a neat circuit diagram and derive the expression of frequency of oscillation. (13)
- (OR)
- b) i) Explain the operation of Colpitts oscillator and derive the expression of its frequency of oscillation. (10)
- ii) If C_1 and C_2 are 200 PF and 50 PF respectively. Calculate the value of inductance for producing oscillations at 1 MHz in the Colpitts oscillator circuit. (3)
13. a) Draw the single tuned amplifier and explain the frequency response. Derive the expression for its gain and cutoff frequency. (13)
- (OR)
- b) Conclude the following with neat circuit diagram :
- i) Hazeltine neutralization. (7)
- ii) Neutrodyne neutralization. (6)
14. a) i) Classify the various types of diode clippers. (6)
- ii) For a transistor switching circuit predict the collector current response and other parameters for the input of pulse waveform. (7)
- (OR)
- b) With neat circuit diagram and suitable wave forms, explain the operation of a Collector coupled transistor Astable Multivibrator. (13)
15. a) i) Explain the operation of the transformer coupled class A audio power amplifier. (7)
- ii) Explain the terms conversion efficiency and maximum value of efficiency used in audio power amplifiers. (6)
- (OR)
- b) Describe the operation of class C amplifier and derive its efficiency. (13)

PART - C

(1×15=15 Marks)

16. a) Identify the working principle of RC phase shift oscillator circuit diagram, also derive the expression for frequency of oscillation and condition for sustained oscillation. (15)
- (OR)
- b) Examine the working of Miller and Pierce crystal oscillators with neat circuit diagrams. Compare them and comment on their features. (15)