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Register Number: …….

B.E DEGREE EXAMINATIONS: MAY 2015

(Regulation 2013)

Fourth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U13ECT402**:**Electronics Circuits II

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Negative feedback amplifier results in

   a) More gain and more bandwidth b) More gain and less bandwidth

   c) Less gain and more bandwidth d) Less gain and less bandwidth

2. An amplifier without feedback has a voltage gain of 50, input resistance is 1 KΩ & Output resistance of 2.5KΩ.The input resistance of the current-shunt negative feedback amplifier using the above amplifier with a feedback factor of 0.2 is …….

3. The attenuation of the three-section RC feedback phase-shift oscillator is

   a) 1/9 b) 1/30

   c) 1/3 d) 1/29

4. Calculate the value of C1 = C2 for the Wien bridge oscillator to operate at a frequency of 20 kHz. Assume R1 = R2 = 50 kΩ and R3 = 3R4 = 600 Ω .

5. Small signal tuned amplifier is operated under _____ operation.

   a) Class A b) Class B

   c) Class AB d) Class C

6. Tuned circuits are bulky and costly because they use ……..

7. Monostable Multivibrator may be used to generate

   a) Sweep voltage b) pulses

   c) Sinusoidal voltage d) Sweep currrent

8. Astable Multivibrator is also called……..

9. Duty cycle of a DC-DC Converter is

   a) T on/T b) T/Ton

   c) Toff/T d) T/Toff

10. The AC voltage control is done using ……..

PART B (10 x 2 = 20 Marks)

(Not more than 40 words)

11. List out the characteristics of feedback amplifier.
12. What is the effect of input resistance due to series mixing?
13. State the condition for Barkhausan Criterion.
14. Discuss the advantages and disadvantages of RC phase shift Oscillator.
15. Distinguish between Single tuned and Double tuned amplifier.
16. Define Neutralization.
17. Distinguish between Differentiator and Integrator.
18. What are the features of a collector-coupled Astable Multivibrator?
19. Define Ripple Factor.
20. Define IGBT.

PART C (5 x 14 = 70 Marks)

(Not more than 400 words)

Q.No. 21 is Compulsory

21. Derive the general expression for LC oscillator. Draw the circuit for Hartley Oscillator and derive the frequency of oscillation and condition for oscillation.

22. a) (i) Explain the four feedback topologies with relevant block diagrams. (9)

(ii) Describe the effect of negative feedback on the bandwidth and distortion in an amplifier. (5)

(OR)

b) (i) Explain the nature of feedback in an Emitter follower circuit with a neat circuit diagram. Derive the expression for input and output impedence, voltage and current gain. (10)

(ii) An amplifier has a voltage gain of 400, f1=50Hz, f2=200 kHz and distortion of 10% without feedback. Determine the amplifier voltage gain, f1f, f2f and Df when negative feedback is applied with feedback ratio of 0.01. (4)

23. a) Explain the working of Double tuned amplifier and its frequency response characteristics with relevant diagrams.

(OR)

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b) Describe about the various Neutralization techniques with relevant diagrams.

24. a) (i) Define a Clipper. Explain about the different types of clippers with neat diagrams and waveforms. (12)

(ii) Discuss the use of speed-up capacitors. (2)

(OR)

b) (i) Draw and explain the circuit of Monostable multivibrator with suitable triggering methods. Give the waveforms at different modes. (10)

(ii) Define a Schmitt Trigger Circuit. Draw its Circuit diagram and waveforms. (4)

25. a) (i) Describe about a Full wave rectifier circuit with filter with relevant waveforms. (10)

(ii) Derive the expression for ripple factor of a Half wave and full wave rectifier. (4)

(OR)

b) (i) Describe about the Switched Mode Power Supply with relevant diagram. (10)

(ii) Discuss the advantages and disadvantages of a Buck-Boost Converter. (4)

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