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Question Paper Code : 23445

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fourth Semester

Electronics and Communication Engineering

EC 2251 — ELECTRONIC CIRCUITS — II

(Regulations 2008)

(Common to PTEC 2251 – Electronic Circuits II for B.E. (Part-Time) Third Semester
– ECE – Regulations 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List few advantages of negative feedback.
2. Define sensitivity of an amplifier.
3. What is Miller crystal oscillator? Explain its operation.
4. A Weinbridge oscillator is used for operations at 9 kHz. If the value of the resistance R is 100 kohm. What is the value of C required?
5. A tuned circuit has resonant frequency of 1600 kHz and bandwidth of 10 kHz. What is the value of its Q – factor?
6. Write down the applications of class C tuned amplifiers.
7. Compare Oscillators with multivibrator.
8. Draw a simple comparator circuit using Diode.
9. What is a blocking oscillator? What type of feedback is used in blocking oscillators?
10. Justify the need of time base circuits in RADAR?

PART B — (5 × 16 = 80 marks)

11. (a) 'Negative feedback improves stability reduce noise and increase input impedance' Justify this statement in detail and explain the effects of negative feedback.

Or

- (b) Elaborate on the four different types of negative feedback.

12. (a) Mention the different types of RC oscillators and explain about a RC-phase shift oscillator. Also derive the expression for frequency of oscillation of RC-oscillator.

Or

- (b) Explain Clapp's oscillator and derive the expression for frequency of oscillation. Also explain how frequency stability can be improved in Clapp's oscillator.

13. (a) Explain single tuned and double tuned amplifiers and differentiate between them.

Or

- (b) Justify the need of neutralization and explain the different types of neutralization.

14. (a) (i) Determine the value of the capacitors used in an astable multivibrator to provide a train of pulse 2μ sec wide at a repetition rate of 75 kHz with $R_1 = R_2 = 10\text{ k}\Omega$. (4)

- (ii) Describe the working of a Schmitt trigger circuit with the help of necessary sketches. (12)

Or

- (b) (i) Sketch the response of RC high pass filter for the following inputs and explain

(1) Ramp

(2) Pulse. (2 × 4 = 8)

- (ii) Explain the switching characteristics of transistor with a neat sketch. (8)

15. (a) Write about Miller Integrator and Current-Time Base Circuit with waveform.

Or

- (b) (i) Draw and explain the triggering circuit used in monostable blocking oscillator. (8)

- (ii) Describe monostable blocking oscillator with emitter timing and derive its ON time and OFF time. (8)