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Question Paper Code : 51398

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Fourth Semester

Electronics and Communication Engineering

EC 2251/EC 41/10144 EC 402/080290019 — ELECTRONIC CIRCUITS — II

(Regulation 2008/2010)

(Common to PTEC 2251 Electronic Circuits — II for B.E. (Part-time) Third Semester
ECE — Regulation 2009)

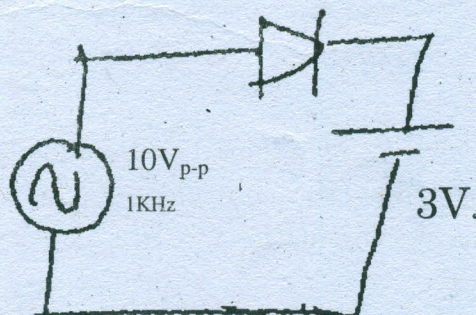
Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

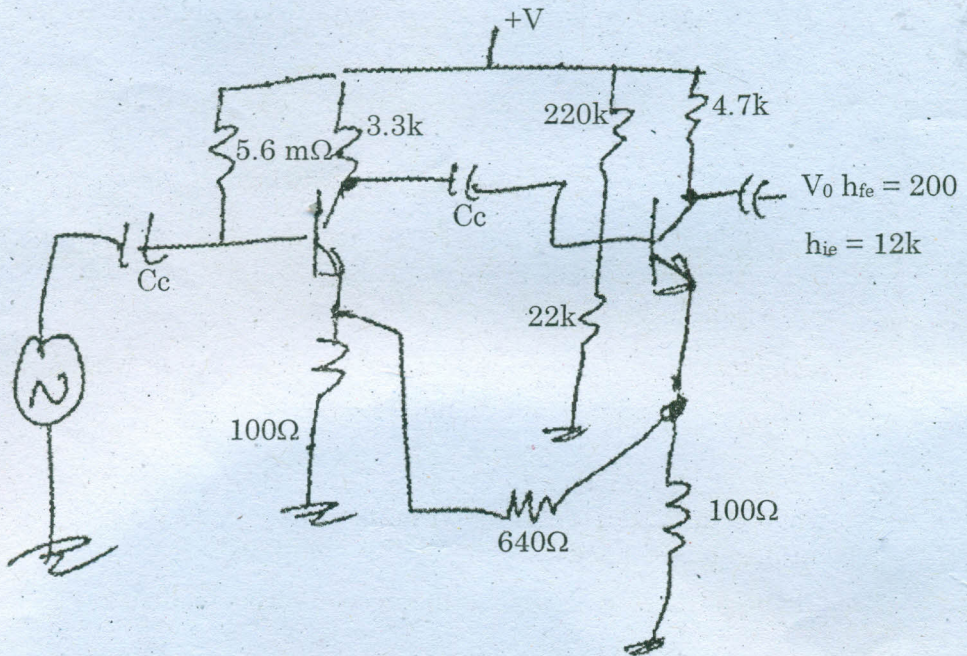
1. Draw a single stage amplifier with current series feedback.
2. 'Negative feedback stabilises the gain' — Justify the statement.
3. Define Barkhausen Criterion for oscillators.
4. Draw and explain the electrical equivalent circuit of quartz Crystal.
5. Draw a double tuned amplifier and its frequency response for different types of coupling.
6. What is meant by Neutralization?
7. Draw the input and output waveform of circuit shown below.



8. Briefly explain any one type triggering for Bistable multivibrator.
9. Draw the equivalent circuit of pulse transformer.
10. Draw a current sweep generator with current and voltage waveforms.

PART B — (5 × 16 = 80 marks)

11. (a) Find the type of amplifier shown in the diagram given below and draw the basic amplifier without feedback & find its gain with equivalent circuit. Also find feedback factor and its closed loop voltage gain.



Or

- (b) (i) Draw the block diagram of voltage series amplifier and derive for A_{vf} , R_{if} and R_{of} . Draw a two stage amplifier with voltage series feedback. (10)
 - (ii) Derive for Bandwidth with feedback BW_f . (6)
12. (a) Explain how conditions for oscillation are satisfied for RC-phase shift oscillator and derive its frequency of oscillation.

Or

- (b) What is the drawback of Colpitt oscillator and how it is overcome in Clapp oscillator? Draw the equivalent circuit of Clapp oscillator and derive its frequency of oscillation.

13. (a) (i) What is meant by stagger tuning of tuned amplifiers? (6)
(ii) Draw class C tuned amplifier and derive its efficiency. (10)

Or

- (b) (i) Why Neutralization is needed and explain with circuit Hazeltine Neutralization method? (8)
(ii) Draw a single tuned amplifier and derive its max gain with its equivalent circuit. (8)
14. (a) (i) Define delay time and storage time of a Bipolar Transistor. (6)
(ii) Explain the transfer characteristics of Schmitt Trigger with circuit diagram. (10)

Or

- (b) (i) Briefly explain a positive clamper circuit with an example. (5)
(ii) Draw a discrete circuit of Astable Multivibrator and explain its working with waveforms at both collector and base terminals. Also derive its frequency of oscillation. (6)
(iii) Design a discrete monostable multivibrator with $V_{CC} = 20\text{ V}$ and $T = 5\text{ sec}$. Draw the designed circuit. (5)
15. (a) Explain Transistor Bootstrap Time Base Generator with relevant waveforms. Derive its maximum sweep voltage, retrace interval and minimum recovery time.

Or

- (b) (i) Describe monostable blocking oscillator with emitter timing and derive its ON time. (12)
(ii) Explain any one method of triggering the above blocking oscillator. (4)