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B.E. DEGREE EXAMINATION, 2008

(COMPUTER SCIENCE AND ENGINEERING)

(FOURTH SEMESTER)

COEC – 401. ELECTRONIC CIRCUITS AND SYSTEMS

May] [Time : 3 Hours

Maximum : 60 Marks

Answer any ONE full question from each unit.

UNIT – I

1. (a) What is meant by PIV rating of a diode ? What is its importance ? (4)

   (b) Explain the operation of a bridge rectifier. Also, derive an expression for rectification efficiency and Transformer utility factor.(8)

2. (a) Compare series and shunt type voltage regulators. (3)

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(b) With a suitable diagram, explain the operation of a switched mode regulator.(9)

UNIT – II

3. (a) What is a Darlington pair amplifier ? (3)

   (b) Explain the operation of a transformer coupled amplifier. (9)

4. (a) Distinguish CLASS-A from CLASS-B amplifiers. (3)

   (b) Derive expressions for power dissipation and conversion efficiency of a CLASS-A push-pull amplifier. (9)

UNIT – III

5. (a) Define the term 'Input offset current' of an OP-AMP. (3)

   (b) Suggest a suitable technique for Input offset current in an OP-AMP. Explaine its operation. (9)

6. (a) Draw the circuit of an OP-AMP based V to I converter. (4)

(b) Draw the circuit of an OP-AMP peat detector and explain its operation. (8)

UNIT – IV

7. (a) Draw and explain the operation of an OP-AMP based Schmidt Trigger. (9)

   (b) State the applications of a zero crossing detector. (3)

8. (a) Define Lock – in range and capture range of a PLL. (4)

   (b) Explain the astable operation of a 555 Timer with necessary circuit diagram and waveforms. (8)

UNIT – V

9. (a) How an inverted R-2R ladder type DAC differs from simple R-2R ladder type DAC. (3)

   (b) With suitable diagrams, explain the operation of an inverted R-2R Ladder type DAC.(9)

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10. (a) What is the conversion time and resolution of an 8 bit successive approximation type ADC driven by a 1 MHz Clock. The internal reference voltage is 5V. (4)

(b) Explain the operation of a dual slope ADC. (8)

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