Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 91436

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Third Semester

Electrical and Electronics Engineering

EE 2203/EE 35/080280018/10133 EE 305 A — ELECTRONIC DEVICES AND CIRCUITS

(Regulation 2008/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a Rectifier? Name the types.

2. What are Filters?

3. Name the different configurations of BJT .

4. What are Opto Couplers?

5. Write the relation between JFET parameters.

6. Why are N-channel MOSFETs preferred over P-channel MOSFETs?

7. List the factors that affects the stability of amplifiers.

8. State Bark-Hausen criteria for sustained oscillations.

9. What are Clippers? Name the types.

10. List the applications of astable multivibrators.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the construction and working of Bridge rectifier using diodes with necessary waveforms. Also derive the expression for rectification efficiency. (16)

Or

(b) Describe the construction and working of the following with their characteristic curves.

(i) LED

(ii) LCD. (8 + 8)

12. (a) Derive the equations for voltage gain, current gain, input impedance and output impedance for BJT using approximate h-parameter model for CE configuration. (16)

Or

(b) Discuss about the following :

(i) Circuit diagram and working of BJT CE amplifier

(ii) Power transistors. (8 + 8)

13. (a) Draw and explain the small signal model of FET for low frequency and also for high frequency. (16)

Or

(b) Explain the construction and working of enhancement MOSFET with its characteristics. (16)

14. (a) Draw the voltage-series feedback amplifier circuit and derive the expressions for input and output resistances. (16)

Or

(b) Describe the construction of RC-Phase shift oscillator and explain its working. Also write the expression for frequency of oscillations. (16)

15. (a) Explain the various types of diode clampers with circuits and waveforms. (16)

Or

(b) Draw the circuit of UJT saw tooth oscillator and explain its working with necessary waves. Also list its applications. (16)

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