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Question Paper Code : 60499

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Third Semester

Electrical and Electronics Engineering

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

(Regulations 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define rectifier. What are the different types of rectifiers?
2. Define line regulation of voltage regulator.
3. How transistor can be used as a switch?
4. What is operating point?
5. Define cut off voltage.
6. What are the different types of MOSFETs.
7. How are amplifiers classified according to negative feedback?
8. Draw the equivalent circuit of crystal oscillator.
9. What is the type of feedback used in an op-amp Schmitt trigger?
10. What is a free running multivibrator?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the operation and characteristics of a Zener diode. (8)
(ii) Explain with neat sketch the operation of full wave diode rectifier with waveforms. (8)

Or

- (b) Explain the operation and principles of series and shunt voltage regulators using Zener diode.
12. (a) (i) Draw hybrid π and derive for its parameters. (10)
(ii) Draw CE hybrid π model and CB hybrid π model. (6)

Or

- (b) Explain the input and output characteristics of a CB configuration using NPN BJT.
13. (a) Explain the construction and working principle of a FET. Draw the relevant characteristics.

Or

- (b) Explain the working principle and characteristics of enhancement and depletion type MOSFET with necessary diagrams.
14. (a) Describe the principle of
(i) Positive feedback
(ii) Negative feedback. Also derive the Barkhausen criterion. (8 + 8)

Or

- (b) Explain the operation of a Hartley oscillator. Derive for its frequency of oscillation. How conditions of oscillation are met?
15. (a) Explain the operation and characteristics of UJT relaxation oscillator.

Or

- (b) With neat diagram, describe the operation and characteristics of monostable multivibrator and list its applications. Derive for its ON time.