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Question Paper Code : 31393

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Third Semester

Electrical and Electronics Engineering

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

(Regulation 2008/2010)

(Common to PTEE 2203 – Electronic Devices and Circuits for B.E. (Part-Time)
Second Semester Electrical and Electronics Engineering and Computer Science and
Engineering – Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a rectifier?
2. What is diffusion current?
3. State the relation between ' α ' and ' β ' of a transistor.
4. What are optocouplers?
5. Mention any two advantages of FET over BJT.
6. What is darlington pair?
7. State Barkhausen's criterion for oscillation.
8. Mention the types of feedback amplifier connections.
9. Define "Intrinsic Stand off Ratio".
10. What is a clamper?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the working of a PN Junction diode and Zener diode and explain their V-I characteristics. (8 + 8)

Or

- (b) Explain the working of centre-tapped full wave rectifier (with and without filter) with neat diagrams. (16)
12. (a) Explain the input and output characteristics of a CE transistor configuration. List out the comparisons between CE, CB and CC configurations. (16)

Or

- (b) Draw the hybrid model of transistor in CE and CB configurations. Explain how h-parameters can be determined from the transistor characteristics. (16)
13. (a) Draw the low-frequency equivalent model of FET. With a neat sketch, explain the construction and characteristics of enhancement MOSFET. (16)

Or

- (b) Draw the high frequency equivalent model of FET with a neat sketch, explain the construction and characteristics of depletion MOSFET. (16)
14. (a) Explain the general characteristics of a negative feedback amplifier: Represent
- (i) voltage-series
 - (ii) voltage-shunt
 - (iii) current series and
 - (iv) current shunt feedback connections diagrammatically. (16)

Or

- (b) Explain the construction and working of Harvey oscillator with neat diagrams. (16)
15. (a) Explain about any four types of clippers. (16)

Or

- (b) Explain the working of a Schmitt trigger with a neat sketch. (16)