

504

October 2016

Time - Three hours
(Maximum Marks: 75)

- [N.B: (1) Answer any FIVE questions in each PART - A and PART - B.
Q.No. 8 in PART - A and Q.No. 16 in PART - B are compulsory.
(2) Answer division (a) or division (b) of each question in PART - C.
(3) Each question carries 2 marks in PART - A, 3 marks in Part - B
and 10 marks in PART - C.]*

PART - A

1. What are the classifications of semiconductor?
2. What is a rectifier? Name the types of rectifier.
3. Draw the circuit of collector to base bias.
4. List the advantages of negative feedback.
5. State the condition for oscillations.
6. List any four differences between BJT and FET.
7. What is an opto-coupler? Draw the symbol of it.
8. Compare SCR and transistor.

PART - B

9. Compare zener breakdown and avalanche breakdown.
10. Draw the circuit of a halfwave rectifier circuit with capacitor filter.
11. Mention any one application of SCR, TRIAC and DIAC.
12. Draw the circuit of emitter follower.
13. Draw the emitter characteristics of UJT and note the important points.
14. Explain MOSFET as a switch.
15. Draw the circuit of astable multivibrator.
16. Explain the operation of a transistor as an amplifier.

[Turn over.....

PART - C

17. (a) Explain the working of a PN junction diode with its VI characteristics.

(Or)

- (b) (i) Explain the working of a bridge rectifier with necessary diagrams.
(ii) What is the use of filter in the above circuit?

18. (a) Explain the input and output characteristics of a transistor in CE configuration.

(Or)

- (b) Briefly explain the types of negative feedback.

19. (a) Explain the working of RC phase shift oscillator.

(Or)

- (b) Explain the working of UJT as a relaxation oscillator and list its applications.

20. (a) Explain the VI characteristics of TRIAC with a neat circuit diagram.

(Or)

- (b) Explain the characteristics of N-channel and depletion mode MOSFET.

21. (a) (i) Explain the operation of a photo transistor.
(ii) Explain any one type of clipper with relevant waveform.

(Or)

- (b) (i) Explain the use of transistor as Schmitt trigger with necessary diagram and waveforms.
(ii) Write the difference between multivibrator and Schmitt trigger.
