*

C16-EC-302

6233

BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL—2021

DECE - THIRD SEMESTER EXAMINATION

ELECTRONIC CIRCUITS

[3 Hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer all questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Write the importance of transistor biasing.
2. List the factors affecting the operating point.
3. Define h-parameters of BJT in CE configuration.
4. Draw the small signal model of a FET.
5. Define gain and band width of an amplifier.
6. List types of distortions in power amplifiers.
7. State the conditions for an amplifier to work as an oscillator.
8. Give the classification of multivibrators.
9. Draw the circuit diagram of transistorized collector coupled bi-stable multivibrator.
10. List the applications of Opto coupler.

PART—B

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain thermal runaway. 3

(b) Explain the collector to base bias network. 7

12. *(a)* Explain the importance of Emitter by pass capacitor CE in an amplifier. 4

(b) Explain the fixed bias network with a neat circuit diagram. 6

13. *(a)* Classify the amplifiers based on frequency. 3

(b) Explain the operation of Darlington pair. 7

14. Draw the practical transistor CE amplifier and explain the function of each component. 10

15. Explain the working of tuned collector oscillator with a neat circuit diagram. 10

16. *(a)* Explain the need of power amplifiers. 3

(b) Explain the working of class-B complimentary push pull power amplifier with a neat circuit diagram. 7

17. Explain the working of transistorized collector coupled astable multivibrator with waveforms. 10

18. Explain the construction, operation and characteristics of photo transistor. 10

★ ★ ★