C16-**EC-302**

6233

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DECE– THIRD SEMESTER

ELECRONIC CIRCUITS

Time:3 hours Max. Marks:80

PART – A **10 X 3 = 30M**

Instructions: *1. Answer **all** questions.*
*2. Each question carries **three** marks.*
3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. What is the need for proper biasing of a transistor?
2. Define stability factor and write its equation.
3. Draw the h-model of CE transistor.
4. Classify the amplifiers based on period of conduction and coupling.
5. Mention three applications of Darlington pair
6. Draw the frequency response of double tuned amplifier.
7. List different types of oscillators.
8. List different linear and non linear wave shaping networks.
9. Classify clippers.
10. List the applications of varactor diode.

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PART – B **5 X 10 = 50**

Instructions: 1. *Answer any **Five** questions*
2. *Each question carries **TEN** Marks.*
3. *Answer should be comprehensive and Criteria for Valuation is the content but not the length of the answer.*

11. a) Explain the working of Fixed bias circuit. 5
    b) Explain the importance of heat sink. 5

12. Draw and explain the working of self bias circuit and list its advantages.

13. a) Explain the operation of Darlington pair with the help of circuit diagram. 6
    b) Draw the circuit of practical transistor CE amplifier. 4

14. a) Derive the expression for the gain of negative feedback amplifier. 6
    b) List the merit of negative feedback amplifiers. 4

15. Explain the operation of complementary push-pull amplifier with Circuit diagram. 4+6

16. Explain the working of a colpitts oscillator with a circuit diagram and write the expression for its frequency of oscillations. 3+5+2

17. a) Draw and explain the working of transistorized collector coupled monostable multivibrator with waveforms. 7
    b) Explain the working of clamper circuit. 3

18. a) Explain the operation of photo diode. 5
    b) Explain the use of JFET as current source. 5