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C16–EC–302

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DECE—THIRD SEMESTER EXAMINATION

ELECTRONIC DEVICES AND CIRCUITS

Time : 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. List any three specifications of JFET.

2. Define pinch-off voltage of JFET.

3. Write the need for proper biasing in amplifier circuits.

4. List the factors affecting the *Q*-point stability.

5. Write the effect of negative feedback on gain and bandwidth of an amplifier.

6. Write three advantages of negative feedback amplifier.

7. Write the classification of power amplifiers based on angle of conduction.

8. List three advantages and disadvantages of push-pull amplifier.

9. State Barkhausen criteria in oscillators for sustained oscillation.

10. Draw the symbol of varactor diode, UJT and photodiode.

PART—B

10×5=50

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

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

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

11. Define important parameters of JFET and obtain the relation among them. 10

12. Explain the self-bias circuit and derive its stability factor. 10

13. Explain voltage series feedback using emitter follower amplifier circuit. 10

14. Draw the basic block diagram of a feedback amplifier and explain. 10

15. Draw and explain the operation of class-B push-pull amplifier. 10

16. Draw the circuit of complementary symmetry push-pull amplifier and explain its operation. 10

17. Explain the working of an *R-C* phase-shift oscillator circuit with a neat circuit diagram. 10

18. *(a)* Explain the construction and working principle of UJT. 7

(b) Draw the characteristics of UJT. 3

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