



C16-AEI-302

**6214**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**AUGUST/SEPTEMBER—2021**

**DAEI - THIRD SEMESTER EXAMINATION**

**ELECTRONIC 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 advantages of JFET over BJT.
2. List any three thyristor family devices.
3. List the types of biasing circuits.
4. Define Stability factors S and Sv.
5. Draw the circuit of direct coupled amplifier.
6. State the differences between negative and positive feedback.
7. List any three differences between voltage amplifiers and power amplifiers.
8. State the Barkhausen criterion conditions for an amplifier to work as an oscillator.
9. State reasons for instability in oscillator circuits.
10. Define the term sweep voltage.

\*

## PART—B

10×5=50

- 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. Explain the working of N-channel JFET with drain and transfer characteristics.
12. Explain potential divider method of biasing.
13. Explain the principle of operation of two-stage RC coupled amplifier with circuit diagram and draw its frequency response.
14. Explain the circuit of push-pull power amplifier with circuit diagram.
15. (a) Explain the emitter follower circuit.  
(b) Draw the circuit of monostable multivibrator using transistors.
16. Explain the working of an RC phase shift oscillator with diagram. State the conditions of sustained oscillations and give the expression for the frequency of oscillations.
17. Explain the working of crystal oscillator with diagram. State the conditions of sustained oscillations and give the expression for the frequency of oscillations.
18. Explain Miller's sweep circuit using transistor with diagram.

★ ★ ★

\*

\*