



C20-BM-402

7419

BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023

DBME – FOURTH SEMESTER EXAMINATION

LINEAR INTEGRATED CIRCUITS APPLICATIONS

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. Draw the equivalent circuit of UJT.
2. List the applications of SCR.
3. Define an electronic oscillator.
4. Mention the merits and demerits of Wein Bridge Oscillator.
5. List the applications of multivibrator.
6. Classify multivibrators.
7. List the applications of sweep circuits.
8. Define bandwidth and Z_i of an ideal OP-AMP.
9. State the need for A/D converters.
10. Define resolution of D/A converters.

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Draw and explain the working of SCR.

(OR)

(b) Explain the working principle of tunnel diode with its V-I characteristics.

12. (a) Draw and explain the operation of an oscillator using negative resistance device like UJT.

(OR)

(b) Draw and explain the circuit of RC phase shift oscillators.

13. (a) Draw and explain the circuit of astable multivibrator using transistor.

(OR)

(b) Draw and explain the circuit of bistable multivibrator using transistor.

14. (a) Draw and explain active filter HPF of first order using OP-AMP.

(OR)

(b) Draw and explain the circuit of summing amplifier and voltage to current converter using OP-AMP.

15. (a) Explain D/A conversion using R-2R ladder network.

(OR)

(b) Explain A/D conversion using counter method.

PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 16.** Analyze the multivibrator which is used frequently for generate the one shot output.

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