



C16-AEI-401

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BOARD DIPLOMA EXAMINATION, (C-16)

JANUARY/FEBRUARY—2022

DAEI - FOURTH SEMESTER EXAMINATION

LINEAR IC APPLICATIONS AND COMMUNICATION SYSTEMS

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 circuit of differential amplifier.
2. Define bandwidth of operational amplifier.
3. State the operation of summing amplifier.
4. Draw the diagram of instrumentation amplifier.
5. List the advantages of active filters.
6. Draw the diagram of monostable multivibrator using 555 timer IC.
7. List the different types of analog modulation methods.
8. Define the term 'image frequency rejection'.
9. List the different types of pulse modulation methods.
10. List the features of GSM mobile technology.

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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.** Define the following terms of an operational amplifier :
(a) Voltage gain (A_v)
(b) Output impedance (Z_o)
(c) Slew rate
(d) Input offset voltage
(e) Input offset current
- 12.** Explain the operation of integrator and differentiator circuits with diagram.
- 13.** (a) Draw the ideal and practical frequency response plots for first order LPF, HPF, BPF and BSF. 6
(b) List the limitations of passive filters. 4
- 14.** Explain the operation of 555 timer IC with block diagram.
- 15.** Explain SSB, DSBSC and VSB.
- 16.** Explain the operation of superheterodyne receiver with block diagram.
- 17.** Explain the principle of pulse code modulation (PCM) with diagram.
- 18.** Explain FDMA, TDMA and CDMA.

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