

(3 Hours)

[Total Marks : 80]

- N.B. : 1. Question **ONE** is **Compulsory**.
 2. Solve any **THREE** out of remaining.
 3. **Draw** neat and **clean** Diagrams.
 4. Assume suitable **data** if required

Q.1. Attempt the following

- Explain the concept of virtual ground in op-amp
- Explain block diagram of PCM
- Compare FET and BJT
- What is ZCD?

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5
5

Q.2. A. Explain the construction and working of n-channel JFET with help of characteristic curves.

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B. Explain op-amp as integrator

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Q.3. A. List down various parameters of op-amp with their practical values and ideal values for IC741.

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B. Explain working of PLL as frequency as frequency multiplier with diagram.

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Q.4. A. Explain Superhetrodyne Receiver along with waveforms at each stage .

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B. What are power amplifiers .what are the types of power amplifiers .Explain class C power amplifiers.

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Q.5. A. Derive the equations for Z_i , Z_o , A_v for common source configuration using voltage divider network

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B. Discuss Delta Modulation and Adaptive Delta Modulation

Q.6. Write short note:

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- TDM-PCM System
- Generation of FM
- Comparators.
- op-amp as summing amplifier
