1T01034 - S.E.(Electronics and Telecommunication)(SEM-IV)(Choice Based) (R- 20-21) (C Scheme) / 40825 - Principles of Communication Engineering

QP CODE : 10027358   DATE: 19/05/2023

Duration: 3hrs   **[Max Marks:80]**

N.B. : (1) Question No 1 is Compulsory.
      (2) Attempt any three questions out of the remaining five.
      (3) All questions carry equal marks.
      (4) Assume suitable data, if required and state it clearly.

1   Attempt any FOUR   [20]

   a   What is low level and high level modulation?

   b   Define: a) Signal to Noise Ratio b) Selectivity c) Sensitivity

   c   Why is VSB amplitude modulation used in television broadcasting?

   d   What is aperture effect? How to avoid it?

   e   What is multiplexing? State its advantages.

2 a How is FET reactance modulator capable of generating FM signal? Use neat   [10]
      circuit diagram to explain the same.

   b Derive the wave equation for AM wave. Draw the time domain and frequency   [10]
      domain representation of AM wave.

3 a Explain the working of ratio detector as FM demodulator. What are its   [10]
      advantages over balanced slope detector?

   b What is sampling? State and prove sampling theorem for low pass signals.   [10]

4 a Explain TDM transmitter and receiver block diagram.   [10]

   b Explain the working of ISB receiver.   [10]

5 a Define noise factor and noise figure. Determine the overall noise factor and   [10]
      noise figure for three cascaded amplifiers with the following parameters: A 1
      =3dB, A 2 =13dB, A 3 =10dB, NF 1 =10dB, NF 2 =6dB NF 3 =10 dB

   b Explain the working of diode detector. How is practical diode detector different   [10]
      from diode detector?

6 a Explain indirect method of FM generation with the help of relevant phasor   [10]
      diagrams

   b Explain DPCM   [5]

   c Compare PAM, PWM and PPM   [5]

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27358   **Page 1 of 1**