

22437

24225

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Figures to the right indicate full marks.
 - (3) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE :

10

- (a) State the need of Modulation.
- (b) Write limitations of PCM technique.
- (c) Write any two advantages and any two disadvantages of FDM.
- (d) State different types of Data Transmission.
- (e) Write any four advantages of Biotelemetry.
- (f) State the sampling theorem.
- (g) State any four advantages of telemedicine.

2. Attempt any THREE :

12

- (a) Differentiate between AM and FM modulation technique (Any 4 points).
- (b) Draw ASK and FSK signal for 1100101011.
- (c) State the electrical characteristics of RS 232 standard.
- (d) Explain the working of DPSK with neat diagram.



- 3. Attempt any THREE :** **12**
- (a) Describe the working of PAM with neat diagram.
 - (b) State the function of TCP/IP model with neat sketch.
 - (c) Explain the concept of Tele-psychiatry and Tele-surgery.
 - (d) Explain AM transmitter with neat diagram.
- 4. Attempt any THREE :** **12**
- (a) Explain operation of single channel biotelemetry system for ECG.
 - (b) For the data stream 10110011, draw the following (i) Unipolar NRZ
(ii) Differential Manchester.
 - (c) Define the term Demodulation. Draw any one circuit for AM demodulator.
 - (d) Write the ethical and legal aspects of internet medical services.
 - (e) Explain data communication protocols used in data communication.
- 5. Attempt any TWO :** **12**
- (a) Compare CDMA, FDMA and TDMA with respect to definition, multiplexing technique, guard band.
 - (b) Draw and explain the block diagram of Digital Communication System.
 - (c) Describe the working of super heterodyne receiver with neat diagram.
- 6. Attempt any TWO :** **12**
- (a) Describe the working principle of PCM with neat block diagram.
 - (b) Explain the working of TDM transmitter and receiver with neat diagram.
 - (c) Explain following transmission mode with neat diagram and example :
 - (i) Simplex
 - (ii) Half duplex
 - (iii) Full duplex
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