Time: 2 Hours   **Total Marks: 60**

N.B.:   **(1) Question No. 1 is compulsory.**

(2) Answer any three questions from the remaining five questions.

(3) Assume suitable data wherever required.

(4) Figures to the right indicate full marks.

Q. 1	Answer any **FIVE** of the following.	[15]
A	What is Frequency Modulation (FM)? Draw its waveform.	[03]
B	State the Sampling theorem and explain its significance in digital communication.	[03]
C	What is OSI model? List its different layers.	[03]
D	How handover (handoff) is related to base station in mobile communication.	[03]
E	What is dispersion in Fiber Optical Communication?	[03]
F	State advantages of satellite communication.	[03]

Q. 2 A	Illustrate basic communication system with a neat block diagram.	[08]
B	Illustrate the working of mobile communication system with a neat diagram.	[07]

Q. 3 A	Sketch a neat block diagram of Pulse Code Modulation (PCM) and explain it in brief.	[08]
B	Define critical angle and hence demonstrate with a neat sketch reflection and refraction in optical fiber communication with its examples.	[07]

Q. 4 A	What is Analog Modulation? Explain Amplitude modulation with a block diagram and suitable waveforms.	[05]
B	With a neat sketch explain TCP/IP model and explain any 2 layers of it.	[05]
C	Explain the block diagram of optical fiber communication system and give any two applications.	[05]

Q.5 A	What is ASK, FSK and PSK? Explain it with a suitable waveform.	[05]
B	Explain the concept of cell and frequency reuse in mobile communication system.	[05]
C	What are the different frequency bands used in satellite communication?	[05]

Q. 6A	Explain the different types of Network topologies with suitable example.	[08]
Q.6 B	What is Satellite communication? List the different types of orbits and justify use of elliptical and polar orbit with respect to altitude, coverage and uses.	[07]

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