

**B.Tech. - VIEP - ELECTRONICS AND
COMMUNICATION ENGINEERING
(BTECVI)**

Term-End Examination

00916

June, 2016

BIELE-018 : SATELLITE AND TV ENGINEERING

Time : 3 hours

Maximum Marks : 70

Note : *Attempt any seven questions. All questions carry equal marks. Any missing data, may be suitably assumed.*

1. (a) What is a satellite system ? Explain the advantages of Digital Satellite Communication. 2+3
- (b) Draw and briefly explain the simplified block diagram of a communication satellite transponder. 5
2. (a) Explain the message transmission by FDMA and TDMA systems. 5
- (b) Describe interleaving of bursets in a TDMA satellite system. 5

3. What is satellite signal processing ? Explain interference analysis. 10
4. (a) Explain carrier recovery with narrow band, band pass filter and AFC loop. 5
- (b) What are the factors that affect the uplink design and downlink design of a geostationary satellite communication system ? Discuss in detail. 5
5. (a) Explain why time division multiplexing is the only option for digital satellite link and why the intermodulation effects are not prevalent in TDM. 5
- (b) What are the various interferences that may affect the satellite link performance ? Explain. 5
6. What is the principle of TV ? Draw and explain the block diagram of a TV transmitter and receiver system. 3+7
7. Define the merits of digital signal processing and draw a block diagram of a digital TV receiver system. 3+7

8. (a) What is the plumbicon operation ? Explain its construction and working. 5
- (b) Explain the colour TV operation and its application. 5
9. Explain the following : 3+3+4
- (a) NTSC
- (b) PAL
- (c) SECAM
10. Write short notes on any *two* of the following : $2 \times 5 = 10$
- (a) Satellite Packet Switching
- (b) Cross Polarisation Interference
- (c) Time Recovery Circuit
- (d) Concept of Plasma Screen
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