1197

Code : 15EC43T

Register Number | | | | | | | |

IV Semester Diploma Examination, Nov./Dec. 2017

DIGITAL COMMUNICATION

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from **Part-A**. **(5 × 6 = 30** marks)

(ii) Answer any **seven** full questions from **Part-B**. **(7 × 10 = 70** marks)

PART-A

1. Define information capacity and state Shannon's theorem. **5**

2. List merits and demerits and applications of bipolar signaling. **5**

3. Write a brief note on companding process. **5**

4. What is digital modulation ? Name the types of digital modulation techniques. **5**

5. What is the significance of inter-symbol interference. **5**

6. What is multiple access methods ? Name the types. **5**

7. Write a note on block code. **5**

8. List the applications of optical fiber. **5**

9. Write a brief note on splices. **5**

PART-B

10.	(a)	Compare analog and digital communication.	5
	(b)	Mention the advantages and disadvantages of PWM.	5
11.	(a)	Describe the generation of PPM.	5
	(b)	Given a channel with an intended capacity of 30 mbps. The bandwidth of channel is 5 MHz. What is signal to noise ratio required in order to achieve this capacity ?	5
12.	(a)	Describe briefly the adaptive delta modulation transmitter with the help of functional block diagram.	5
	(b)	Illustrate the NRZ unipolar signaling format with an example.	5
13.	(a)	Describe briefly BFSK transmitter.	5
	(b)	Mention the applications of QPSK.	5
14.	(a)	Compare the QPSK and BFSK digital modulation techniques.	5
	(b)	Describe briefly MSK transmitter.	5
15.	(a)	Describe the working of four channel TDM/PAM system.	5
	(b)	Write short note on CDMA.	5
16.	(a)	Explain the concept of FDM technique.	5
	(b)	Describe briefly about LRC coding method.	5
17.	(a)	Describe briefly about forward error correction.	5
	(b)	Explain ARQ error control scheme.	5
18.	(a)	Describe briefly about principle operation of semiconductor LASER.	5
	(b)	Describe numerical aperture and angle of acceptance.	5
19.	(a)	Write the concept of WDM.	6
	(b)	Write the applications of optical fiber.	4