9. Write short notes on : $10 \times 2 = 20$

(a) Secret key cryptography

(b) Run length encoding



*Roll No.* .....

# 24042

## B. Tech. 3rd Semester (IT) Examination – March, 2021

### DIGITAL ANALOG COMMUNICATION

**Paper : EE-217-F**

*Time : Three hours ]* *[ Maximum Marks : 100*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

*Note :* Attempt *five* questions in all, selecting *one* question from each Unit.. Question number 1 is *compulsory*. All questions carry equal marks.

1. (a) Enumerate properties of sine wave. 3

(b) Define PSD. 2

(c) State Shannon's limit theorem. 5

(d) Differentiate between simplex and duplex mode transmission. 2

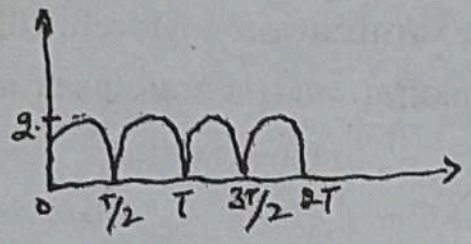
(e) Define Data gram. 3

(f) How CRC works ? 5

## UNIT – I

**2.** (a) Define communication system. Categories them with respect to means and mode of propagation. 10

(b) Carry out the Fourier analysis of full wave rectifier for the output waveform : 10




**3.** (a) Define various types of signals used in communication system and also draw their waveform with mathematical expression. 10

(b) Explain how the bandwidth effects the digital communication system ? 10

## UNIT – II

**4.** (a) Define Amplitude modulation and derive the equation for generating DSB FC amplitude modulated signal. 10

(b) How data encoding helps in communication system ? Discuss Manchester encoding in details. 10



**5.** (a) Enumerate advantages of fiber optics cable when used for data communication. 10

(b) What do you mean by physical layer interface ? Discuss in details RS 232 interface. 10

## UNIT – III

**6.** Tabulate the difference between the following : 6, 6, 8

(a) Connection oriented and connectionless services.

(b) Simplex and full duplex mode.

(c) Serial and Parallel transmission.

**7.** (a) Bring out salient points of circuit switching and packet switching. 10

(b) Explain briefly working of PSTN system. 10

## UNIT – IV

**8.** (a) Why errors takes place during transmission ? Discuss in details forward error correction mechanism. 10

(b) Discuss in details the block sum check method when used for error detection. 10