Question Bank
Academic Year: 2022-23   Semester: V

Sub: Digital Communication　　　　**Sem: V**　　　　**Year: TE**

Q.N.	Questions
1	With the help of diagram explain the function of each block of digital communication.
2	Define the following terms and give their significance (i) Mean (ii) Variance (iii) Standard deviation w.r. to Gaussian probability function.
3	State and explain Central limit theorem
4	Explain different types of random variables.
5	Explain Gaussian probability density function in detail
6	Explain Rayleigh probability density function in detail
7	State Shannon's theorem for Channel Capacity.
8	Define Entropy of an information source and explain its significance.
9	A discrete memoryless source is capable of transmitting three distinct symbols mo, m1, m2 . their probabilities are ½, ¼, ¼ respectively. Calculate the source entropy. .
10	A source produces 4 symbols with probability 1/2, 1/4, 1/8, 1/8. For this source, a practical coding scheme has an average codeword length of 2 bits/symbol. Find efficiency of code.
11	Construct the Shannon –Fano code for the given messages and their probabilities. m1　m2　m3　m4　m5　m6　m7　m8 ½　1/8　1/8　1/16　1/16　1/16　1/32　1/32
12	A discrete memoryless source has an alphabet of five symbols with their probabilities shown m1　　m2　　m3　　m4　　m5 0.4　0.19　0.16　0.15　0.10 Construct Huffman code and calculate code efficiency
13	Draw the following data formats for data bit stream 101101001 Unipolar RZ, NRZ Polar RZ, NRZ AMI, Split phase Manchester