



American International University- Bangladesh (AIUB)
Faculty of Engineering

Course Name: Data Communication
Semester: Spring 2023
Total Marks: 30
Faculty Name: Sadman Shahriar Alam

Course Code: COE 3201
Term: Final
Submission Date: 26-04-2023
Assignment: 02/OBE

Course Outcome Mapping with Questions

Item	COs	POIs	K	P	A	Marks	Obtained Marks
Q1	CO4	P.f.2.C6	K7	P1, P3, P7		30	
Total:						30	

Student Information:

Student Name: Sirajus Salehin	Student ID: 21-44543-1
Section: J	Department: CSE

Marking Rubrics (to be filled by Faculty):

	Excellent [15]	Proficient [12]	Good [10]	Acceptable [7]	Unacceptable [5]	No Response [0]	Secured Marks
Problem	Detailed unique response explaining the concept properly and answer is correct with all works clearly shown.	Response with no apparent errors and the answer is correct, but explanation is not adequate/unique.	Response shows understanding of the problem, but the final answer may not be correct	Partial problem is solved; response indicates part of the problem was not understood clearly.	Unable to clarify the understanding of the problem and method of the problem solving was not correct	No Response/(Copied/identical submissions will be graded as 0 for all parties concerned)	
1							
2							
Comment						Total marks (30)	

Use your ID (ID = AB-CDEFG-H)

(For example: If B=1, C=2 and E=1, BCE= 121)

1. A voice channel occupies a bandwidth of **BCE** kHz. Ten voice channels are multiplexed together using FDM (Frequency Division Multiplexing) with guard bands of **DG** Hz.

(a) Propose the minimum required Bandwidth for the setup mentioned above.

(b) Design the configuration of multiplexing and demultiplexing process as an illustration using the above voice channels, bandwidth and the guard bands with proper labeling (choose carrier frequency range of your preference according to the Bandwidth).