



United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Mid Term Exam Trimester: Summer - 2020

Course Code: CSE 315 Course Title: Data communications

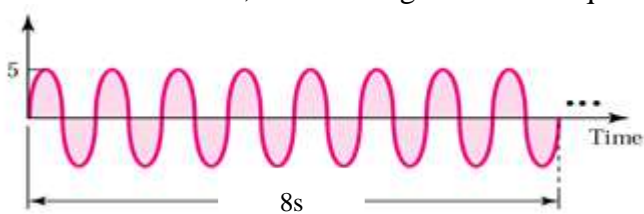
Sec: All

Total Marks: 20

Duration: 1 hour

Answer all questions.

Figures are in the right-hand margin indicating full marks.

Q1		
a)	Provide a short description about the Transmission mode used in data communication with practical example.	[2]
b)	Suppose you and your friend are communicating using Facebook that is running inside a chrome web browser on both of your Laptops. Now, in both of your chrome browser, multiple tabs are open. Your Facebook message goes into the specific Facebook tab on your friend's computer. Which of the layer in the OSI model is responsible for this? Name the functions that are being performed in this layer.	[2]
c)	Given an IP address find the total number of networks and hosts in the class which the IP address belongs: 1. 123.45.3.4	[1]
Q2)		
a)	What happens when you decompose a periodical composite signal? Given the signal in the time domain, draw the signal in the frequency domain. 	[1+1]
b)	Statement 1: The medium has a bandwidth of 300 MHz Statement 2: The medium has a bandwidth of 300 Mbps What is meant by the above statements? Is there any difference?	[2]
c)	We need to send 265 kbps over a noiseless channel with a bandwidth of 50 kHz. How many signal levels do we need?	[1.5]
d)	Calculate the total delay (latency) for a frame of size 5 million bits that is being sent on a link with 12 routers each having a queuing time of $5 \mu s$ and a processing time of $1 \mu s$. The length of the link is 2000 Km. The speed of light inside the link is $2 \times 10^8 m/s$. The link has a bandwidth of 5 Mbps	[2.5]

Q3)		
a)	<p>i. Is there any advantage of Bit stuffing over byte stuffing? If so then write the advantage?</p> <p>ii. Given an input stream. Show the procedures of</p> <ol style="list-style-type: none"> 1. Byte Stuffing at Sender Data Link Layer 2. Byte Un-Stuffing at Receiver Data Link Layer <div> <div>Flag</div> <div>ESC</div> <div>ESC</div> <div>MSG</div> <div>MSG</div> <div>Flag</div> <div>Flag</div> <div>A</div> </div>	<p>[1]</p> <p>[2]</p>
b)	<p>Suppose, your budget is low but you want to use Optical fiber, which propagation mode will you use in the Optical fiber? Are you expecting any distortion in that mode? If you are expecting any distortion they explain the reason in short?</p>	[1+1]
c)	<p>Which of the unguided medium is used in cellular technology? Why the height of cell towers are so important?</p>	[2]