

Name: Chung Lok Ming

Subject Code: SEHH2238

Student ID: 20008848A

Lecture Group: 201

## SEHH2238 Computer Networking Mid-term Test – Answer Sheet

### Instruction to Students:

1. **Answer ALL questions.**
2. Fill your personal particulars in the header of this answer sheet.
3. Insert your answer into the space provided in this answer sheet.
4. Show your work clearly and neatly. Marks will be deducted for untidy work.
5. Upon completion, save a copy of this file into **PDF file format**.
6. **Upload the PDF file** to the submission link on Moodle within the **15-minute submission grace period**.

### Important:

Ensure the originality of your work. Any form of plagiarism is subject to disciplinary actions such as mark deduction, disqualification or even expulsion by the College.

*(Please refer to the relevant section(s) on plagiarism of the Student Handbook.)*

For Markers Only	
Question	Mark
1	
2	
3	
4	
Total	

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## Answer for Question 1

**/25**

a)

$$-9.6/10 = \log_{10}(0.5644/P_1)$$

$$-0.96 = \log_{10}(0.5644/P_1)$$

$$P_1 = 5.14739 \text{ mW}$$

b)

$$24k = 13K \log_2(1 + \text{SNR})$$

$$24/13 = \log_2(1 + \text{SNR})$$

$$2^{(\cdot)} = 1 + \text{SNR}$$

$$\text{SNR} = 2^{(\cdot)} - 1$$

c)

The third factor that may alter the signal during transmission is distortion. Distortion means that the signal changes its form or shape because of difference in delay of different frequency components.

d)

i)

“W” = 1010111, “4” = 0110100

ASCII of “W4”: 1010111 0110100



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## Answer for Question 2

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a)

The sender sends one frame and waits for an ACK before sending the next frame  
If no ACK is received after a period of time (timeout), the sender retransmits.

b)

c)

d)

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### Answer for Question 3

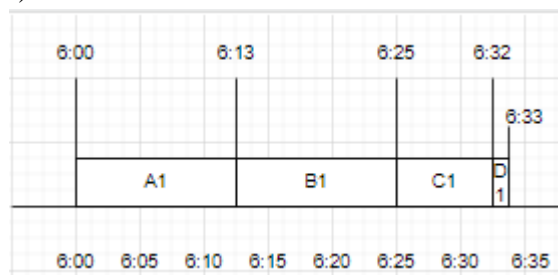
**/25**

a)

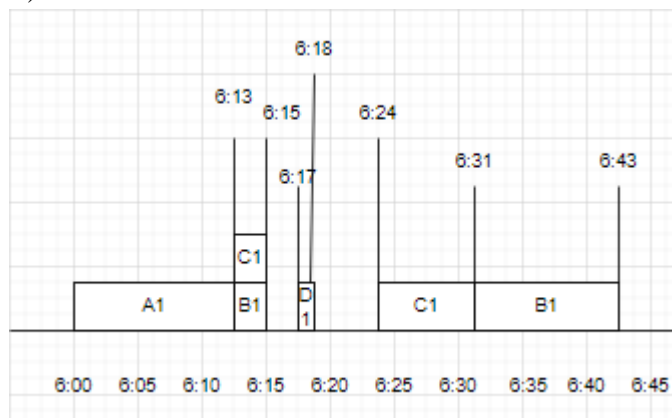
1-persistent CSMA will continuously sense channel for transmission of frames, but Non-persistent CSMA will wait for random amount of time to check carrier.

b)

i)



ii)



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### Answer for Question 4

**/25**

a)

i)

Mask in binary: 11111111 11111111 11000000 00000000

Mask dotted decimal: 255. 255. 192. 0

ii)

Address in binary: 00001010 01111001 10000000 00000000

Address in dotted decimal: 10. 121. 128. 0

iii)

Address in binary: 00001010 01111001 10111111 11111111

Address in dotted decimal: 10. 121. 191. 255

iv)

10. 121. 128. 1 - 10. 121. 191. 254

b)