



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2010/2011**

COURSE NAME : NETWORK &
DATA COMMUNICATION

COURSE CODE : BIT 2073 / BIT 20703

PROGRAMME : BACHELOR OF INFORMATION
TECHNOLOGY

EXAMINATION DATE : APRIL / MAY 2011

DURATION : 3 HOURS

INSTRUCTION : ANSWER ALL THE QUESTIONS

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

- Q1** (a) Nowadays business, education, sciences, industry and many discipline are rely on computer networks and internetworks because we can exchange the data accurately, and quickly at any time. But before we use the network, we need to address three main questions to check whether the network fulfill the goal or not.

List all the **THREE (3)** questions.

(3 marks)

- (b) Data communication are the exchange of data between two devices via some form of transmission medium. The effectiveness of a data communication depends on four fundamental characteristics.

Describe the **FOUR (4)** fundamental characteristics.

(8 marks)

- (c) Explain **TWO (2)** types of transmission technology.

(6 marks)

- (d) List **TWO (2)** OSI Layers that deal with the physical aspects of moving data.

(2 marks)

- Q2** (a) Shazwan is planning to replace the existing cable with Fiber Optic Cable in his company. But he doesn't know much about the Fiber Optic cable. Help him to understand more about the cable.

(i) Explain the characteristic of Fiber Optic Cable.

(2 marks)

(ii) State **THREE (3)** advantages of Fiber Optic Cable.

(3 marks)

(iii) State **THREE (3)** disadvantages of Fiber Optic Cable.

(3 marks)

- (b) Discuss **THREE (3)** differences of the wireless transmission that used by Radio and Satellite networks.

(6 marks)

- (c) Show how the Internet Checksum works at sender site and receiver site by giving proper examples and calculations.

(10 marks)

- (d) List the **THREE (3)** popular controlled-access methods.

(3 marks)

Q3 Given the following IP address:

202 . 17 . 53 . 124

- (a) Convert the given IP address to binary notation (2 marks)
- (b) Find the class of the given IP address. (1 mark)
- (c) Assuming the mask of the IP address is /26, calculate the first address, last address and the number of available addresses for the network. Show your calculations. (9 marks)

Q4 Given the following scenario:

You are the Network Engineer of Hamid Travels which is located in Parit Raja. One of the IP addresses of this organization is 130.34.12.64 and the subnet mask is 255.255.255.192. It has 4 departments and each department need 16 addresses.

- (a) If you want to create subnetworks for this organization, how many subnetworks are needed? (1 mark)
- (b) Design the network for Hamid Travels. (12 marks)
- (c) Configure the network by providing the IP address, subnet mask, subnet address, broadcast address and gateway address for each node. (12 marks)
- (d) Suggest how to connect the existing network in Parit Raja with another network in their new branch in Parit Hamba. Illustrate your suggestion. (4 marks)

- Q5**
- (a) Compare the characteristics of the media that used in all the Standard Ethernet implementations. (4 marks)
 - (b) Draw a proper diagram to show the Bluetooth Layers. (5 marks)
 - (c) In your opinion, why the broadband connection will disrupt on raining day? (4 marks)