



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2014/2015**

COURSE NAME : BASIC COMPUTER NETWORK
COURSE CODE : DAT21203
PROGRAMME : 2 DAT
EXAMINATION DATE : JUNE/ JULY 2015
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWER **FOUR (4)** QUESTIONS
ONLY FROM **FIVE (5)** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **SIX (6)** PAGES

- Q1**
- (a) Calculate the time required for the data transfer between computer A and B if total of 300K byte data are to be transfer. The ideal data transmission between computer A and computer B through a cable is measured as 150000 baud rate. The channel experiencing data collision that resulting transmission delays of about 1 Kbit per second (Mbps). (3 marks)
- (b) State the purpose of the following internetworking equipment;
- (i) Bridge
 - (ii) Router
 - (iii) Switch
- (6 marks)
- (c) Calculate the number of nodes should contains in the following IP addresses.
- (i) 192.168.1.0/24
 - (ii) 172.16.1.25/16
 - (iii) 10.1.1.10/8
 - (iv) 250.250.0.0/32
- (16 marks)
- Q2**
- (a) Illustrate TCP/IP protocol suite layers. (3 marks)
- (b) Explain why address divided into multiple parts. (3 marks)
- (c) Describe the purposes for creating multiple subnets in a network. (4 marks)

- (d) Illustrate the LAN topology diagram for the following given small company networks;

Table Q2(d) : Network Devices IPs

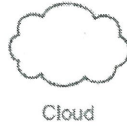
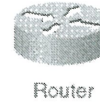
Devices	IP address
Switch	192.168.1.254
Computer A, B, and C	192.168.1.10 to 13
Server	192.168.1.0 network address
Router	Class B address

(5 marks)

- (e) Illustrate WAN topology diagram if the company in Q2(d) above expanded their company and requires to interconnect both LANs of similar devices.
(5 marks)
- (f) Show the IP addresses used for the branch LAN in Q2(e). Use 192.168.20.0/24 network address for this networks.
(5 marks)

- Q3**
- (a) Discuss **THREE (3)** advantages and disadvantages of using OSI model.
(9 marks)
 - (b) Draw network topology by using the networking devices in **Fig.Q3(b)** for the following configuration:

Fig.Q3(b)



- (i) Single LAN comprised one server, 3 PCs and a printer and an interconnecting devices. (5 marks)
- (ii) School office that have 5 teacher PCs, a print server, 2 printers and interconnected with wireless access point. (5 marks)
- (c) State the definition of communication protocol. (3 marks)
- (d) Explain the function of presentation layer. (3 marks)

- Q4** (a) Determine the following broadcast IP address.
- (i) 10.0.0.1/8
 - (ii) 220.0.0.1/16
 - (iii) 192.168.0.1/24
 - (iv) 190.1.0.1/16
 - (v) 220.2.0.1/24
- (10 marks)
- (b) Determine the host range of the following IPs and netmasks.
- (i) 170.0.0.80 255.255.0.0
 - (ii) 10.10.10.10 255.0.0.0
- (10 marks)
- (c) Explain the purpose of network subnetting.
- (5 marks)
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- Q5** (a) Define computer networks.
- (3 marks)
- (b) Explain **TWO (2)** purposes of computer networks.
- (4 marks)
- (c) Differentiate between OSI reference model and TCP/IP.
- (3 marks)
- (d) List **THREE (3)** types of TCP/IP application layer.
- (3 marks)
- (e) Describe peer to peer communication.
- (3 marks)

- (f) Explain the purpose of computer communication protocol. (3 marks)
- (g) Describe the following computer networks categories;
- (i) Local area networks
 - (ii) Campus area networks
 - (iii) Wide area networks
- (6 marks)

- END OF QUESTIONS -