UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2017/2018

COURSE NAME	:	NETWORK AND DATA COMMUNICATION
COURSE CODE	:	BIT 20703
PROGRAMME CODE	:	BIT
EXAMINATION DATE	:	JUNE/JULY 2018
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **SEVEN (7)** PAGES

SECTION A

Instruction: Choose the BEST answer for each of the following questions.

Q1   Which one **NOT** a valid mask?

    A.   255.255.255.254
    B.   255.255.224.0
    C.   255.250.0.0
    D.   All of the above

Q2   What is the subnet address for host 12.2.2.127/16?
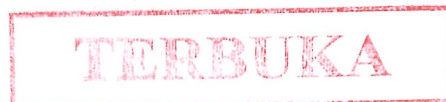
    A.   12.2.0.0
    B.   12.2.2.0
    C.   12.2.2.112
    D.   None of the above

Q3   Currently, a host is 126.2.2.64/8 in the current network. The organization needs 10 subnets. What is a suitable subnet prefix length and borrow bits for this organization?

    A.   /9 or 1 borrow bit.
    B.   /10 or 2 borrow bits.
    C.   /11 or 3 borrow bits.
    D.   None of the above.

Q4   An IPv6 address can have up to _____ hexadecimal digits.

    A.   16
    B.   32
    C.   8
    D.   64

Q5   Numbers ranging from 49,152 to 65,535 can be used as temporary or private port numbers. They are called the _____ ports.

    A.   well known
    B.   registered
    C.   dynamic
    D.   static

Q6   Which term shows Gigabit Ethernet over Unshielded Twisted Pair?

    A.   1000BaseSX.
    B.   1000BaseCX.
    C.   1000BaseT.
    D.   None of the above.

Q7   Which standardization organization is responsible for the 802.3 standard?

    A.   The International Standards Organization (ISO).
    B.   The International Telecommunications Union (ITU).
    C.   The Institute of Electrical and Electronics Engineers (IEEE).
    D.   None of the above.

Q8   The length of Media Access Control (MAC) address is of _____ .

    A.   36 bits
    B.   42 bits
    C.   48 bits
    D.   96 bits

Q9   Which of the following is **NOT** a network device?

    A.   Gateway.
    B.   Linux.
    C.   Router.
    D.   Firewall.

Q10 What is the use of a ping command?

    A.   To view the delay time.
    B.   To test the device on the network is reachable.
    C.   To view router hops.
    D.   All of the above.

(20 marks)

SECTION B

Q11   Answer the followings:

        (a)   Illustrate the mapping between Open System Interconnection (OSI) layers to TCP/IP model.

        (b)   Illustrate Protocol Data Unit (PDU) for OSI layers.

        (c)   Explain the Internet Protocol Version 6 (IP Version 6).

        (d)   Explain why IPv6 is recommended for Internet of Things (IoTs).

                              (20 marks)

Q12   Given the following information:

```
IP Address  : 172.16.0.0
Subnet Mask     : 255.255.240.0
```

Answers the following question.

        (a)   Calculate all the usable subnets for this IP address. Show your work.

                              (10 marks)

        (b)   List down all the first, last and broadcast IP addresses for all the valid subnets.

                              (10 marks)

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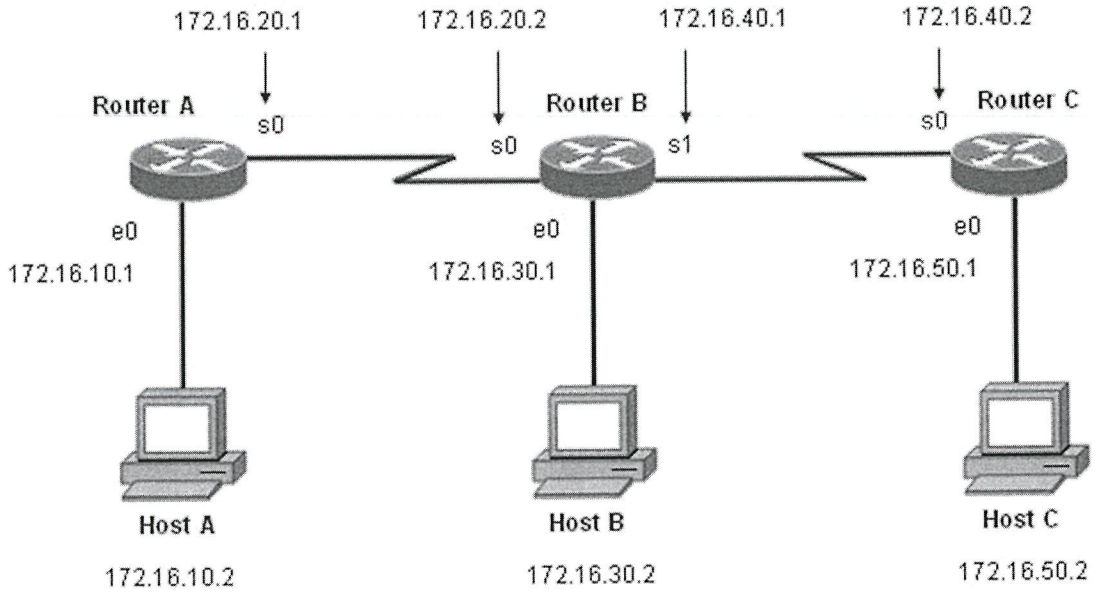**Q13** Write suitable Internetwork Operating System Commands (IOS) for configuring CISCO ROUTER A .

Figure Q13

(a) Command for entering User Privilege Mode.

(2 marks)

(b) Command for entering Global Privilege Mode.

(2 marks)

(c) Command for entering Interface E0 Mode.

(2 marks)

(d) Command for setting E0 with IP address 792.16.10.1 and default subnet.

(2 marks)

(e) Command for activating Interface GE0/0.

(2 marks)

(f) Command for saving current configuration.

(2 marks)

(g) Command for setting Serial0 with IP address 172.16.20.1.

(2 marks)

(h) Command for activating interface Serial0/0.

(2 marks)

(i)   Command for setting the clock rate of 128 000 bits per seconds.

(2 marks)

(j)   Command for viewing all the IOS command saved in running-config.

(2 marks)

Q14 Prepare a Quotation report for an implementation of a simple network (using structured cabling) based on the information given below:

- Total Nodes – 100
- Horizontal cabling – RM200.00 per node (inclusive of face plate, conduit, trunking and labour charge)
- Patch Panel and Ring Management (48 ports) – RM300.00 per unit
- Patch Panel and Ring Management (24 ports) – RM280.00 per unit
- HP Switch (24 ports) – RM3000.00 per unit
- CISCO Router – RM15,000.00 per unit
- Patch Cord (1 meter) – RM10.00 per unit
- Patch Cord (3 meter) – RM20.00 per unit
- Cross Cable (1 meter) – RM10.00 per unit
- IT RACK – RM400.00 per unit

Please include sketch of network diagram and costing detail in your quotation report.

(20 marks)

- END OF QUESTION -

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