JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATION 2013

FIRST YEAR FIRST SEMESTER EXAMINATION 2013

FOR DIPLOMA IN LINUX ENGINEERING

KISUMU LEARNING CENTRE

COURSE CODE: ICT 2113

COURSE TITLE: NETWORK INSTALLATION, MAINTENANCE AND ADMINISTRATION

DATE: 17/4/2013   TIME: 9.00-10.30AM

DURATION: 1.5 HOURS

INSTRUCTIONS

1. This paper contains TWO sections .

2. Answer ALL questions in section A(compulsory) and ANY other TWO questions in section B

3. Write all your answers in the booklet provided

Section A(40 MARKS)

1. **Which command will verify internet connectivity(choose two)**
   a. Debug
   b. ping
   c. ifconfig
   d. ipconfig
   e. echo
   f. e-mail

2. **What is the topology if one central hub has four hubs connected to it, and each of those four hubs has four work stations attached**
   a. Bus
   b. Ring
   c. Starr
   d. an extended star

3. **which of the following describes a LAN**
   a. A network that covers a larger area than WAN
   b. A network that connects workstations, terminals, and other devices in a large metropolitan area
   c. A network that connects workstations, switches and other devices in a geographically limited area
   d. a network that serves users across a geographically large area and often uses transmission devices provided by a common carrier

4. **What is the purpose of VPN? (choose two)**
   a. Secure connectivity
   b. faster public access
   c. connection to a private network through the internet
   d. insecure connection
   e. connection to the internet through a private network

5. **Which of the following cables is used to connect a router to the serial port of a PC**
   a. Rollover cable
   b. Inverted Cable
   c. Crossover Cable
   d. Straight-through cable

6. **Ethernet NICs receive Signals on which pair of pins**
   a. 1-2
   b. 3-6
   c. 4-5
   d. 7-8

7. **How does using a hub or a repeater affect the size of the collision domain**
   a. it reduces it

b. it enlarges it
c. it eliminates it
d. it has no effect on it

8. **which of the following statements regarding switches is correct**
   a. switches encapsulate segments into packets
   b. switches regulate traffic based on layer 1 addressing
   c. Switches designed for Token Ring networks are known as MAUs.
   d. switches combine the connectivity of a hub with traffic regulation of a bridge

9. **Which two are functions of a router in a network? (choose two)**
   a. broadcast containment
   b. segmentation of data packets
   c. layer 2 routing
   d. segmenting the network
   e. only a DCE device

10. **Joan works in the Mombasa Office and needs to connect to the corporate network in Nairobi. The type of information that Joan needs to access is very confidential and security is an issue. Which type of network should Joan use**
    a. WAN
    b. LAN
    c. SAN
    d. VPN

11. **Ethernet NICs transmit Signals on which pair of pins**
    a. 1-2
    b. 3-6
    c. 4-5
    d. 7-8

12. **Which of the following describes the use of a network interface card (NIC)?**
    a. A WAN adapter used for dialup connections
    b. A device that improves Video output from the internet
    c. An adapter that connects a computer to network media
    d. a unit that controls the ability of a computer system to process web based data

13. **Which of the following will cause collision on an Ethernet network**
    a. two nodes having the same MAC address
    b. two or more nodes transmitting at the same time
    c. non-OSI compliant protocol running on the same network
    d. multiple routed protocols running on the sane network

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15. **which of the following physical topologies are used with 10BASE-T Ethernet(choose two)**
    a. Mesh
    b. Star
    c. extended star
    d. ring

16. **which interfaces on the router provide physical connectivity for a WAN**
    a. console
    b. Ethernet
    c. serial
    d. Token Ring

17. **John has been hired as the network administrator of a local company and has decided to add more hubs to the company's existing network. Which of the following has been caused by john's inexperience?**
    a. collision domain extended
    b. an increased number network performance
    c. increase network performance
    d. increased bandwidth
    e. extended bandwidth

18. **Comp A is trying to locate a new computer named comp B on the network. Which of the following does Comp A broadcast to find the MAC address of Comp B?**
    a. MAC request
    b. ARP request.
    c. ping
    d. Telnet
    e. Proxy ARP

19. **Which device is considered a multi-port bridge?**
    a. hub
    b. router
    c. switch
    d. gateway
    e. transceiver
    f. repeater

20. **Which of the following switching techniques must be used for asymmetric switching?**
a. Fragment-free
b. cut-through
c. store-and-forward
d. latency forwarding
e. straight forward

f. fast forward

SECTION B(Answer only 3 questions)60 marks

1. a) What is a Network? (2mk)

 b) Name and explain the Elements of a network (5mks)

   c) Differentiate between WANs, PANs and LANs (3mks)

  d) What is a network topology? (2mk)

  e) Discuss the following;

i) Bustopology (2mk)

ii) Ringtopology (2mk)

iii) Treetopology (2mk)

iv) Meshtopology (2mk)

2. a)What is the OSI model?(1mks)

   b) Name and explain the 7layers of the OSI model (7mks)

    c) List and explain the TCP/IP reference model layer (7mks)

.   d) Mention the protocols under each layer of the TCP/IP Reference Model.(5mks)

3. a)what is security?(2mks)

  b). differentiate between Security attack, security service and security mechanism.(4mks)

  c) Differentiate between connection-oriented and connectionless protocols in communication.(4mks)

  d) list and explain the types of attack the network is vulnerable to.(10mks)

4) Describe a modem (2marks)

a)What is Ping?(1 mark)

b) How does the ping command work?(2 marks)

c) What are the three most important things that the ping test(3 marks)

d) Describe the types of ping commands can be issued(8 marks)

e)What the difference between ifconfig and ipconfig and what's their purpose?(2 marks)

f) How many echo requests does ping send in Linux and windows environment?(2marks)

5

a) Describe a NIC(2marks)
b) To perform the installation of a NIC or modem what are some of the resources you may require(3marks)
c) What are important considerations in the selection of a NIC?(3marks)
d) Describe the Requirements for Internet connection (6marks)
e) Briefly explain some of the Situations that would require NIC installation (6marks