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**University Examinations 2014/2015**

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY AND BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

**ICS 2306: COMPUTER NETWORK**

 **DATE: OCTOBER 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Give a summary account of the evolution of the internet. (4 Marks)
2. With suitable examples, distinguish between the following:
3. The internet verses the World Wide Web. (4 Marks)
4. An intranet verses Extanet. (4 Marks)
5. Clients verses Servers. (4 Marks)
6. Briefly discuss the services provided by the internet to modern day organizations. (4 Marks)
7. List and explain the workings of the components necessary for computer networking. (5 Marks)
8. Describe the various bodies governing computer networking. (5 Marks)

**QUESTION TWO (20 MARKS)**

1. Describe the term network protocol and explain the roles which they play. (4 Marks)
2. Explain the working of the following:
3. TCP/IP (2 Marks)
4. FTP (2 Marks)
5. HTTP. (2 Marks)
6. With the use of a diagram explain the TCP/IP layering model. (4 Marks)
7. Discuss the movement of a packet of data through the layers in a TCP/IP network. (4 Marks)
8. What is the significance of layering? (2 Marks)

**QUESTION THREE (20 MARKS)**

1. What is an IP address? (2 Marks)
2. Distinguish between classfull verses classess addressing. (4 Marks)
3. Use a diagram to explain the various parts of an ip-address using a decimal and a binary example. (4 Marks)
4. How would you determine the class of a given ipaddress? (2 Marks)
5. Complete the table below (4 Marks)

|  |  |  |  |
| --- | --- | --- | --- |
| **CLASS** | **1ST OCTATE RANGE** | **NETWORK BITS** | **HOST BITS** |
| **A** |  |  |  |
| **B** |  |  |  |
| **C** |  |  |  |
| **D** |  |  |  |
| **E** |  |  |  |

1. Discuss the significance of domain names as compared to ip address. (2 Marks)

**QUESTION FOUR (20 MARKS)**

1. Describe the various security issues affecting computer networks. (4 Marks)
2. Distinguish between logical verses physical topologies. (4 Marks)
3. Discuss the implementation of the OSI reference model while troubleshooting computer networks. (6 Marks)
4. With the use of a diagram explain the following cable standards:
5. Coaxial. (2 Marks)
6. Optic fiber. (2 Marks)
7. Wire pair. (2 Marks)

**QUESTION FIVE (20 MARKS)**

1. Differentiate between the following:
2. Switch and Router. (2 Marks)
3. Bandwidth and Baud rate. (2 Marks)
4. Baseband and Broadband. (2 Marks)
5. Give three differences between a Network Operating System and the PC Operating System.

 (3 Marks)

1. Briefly detail four ways in which a computer network can be expanded. (4 Marks)
2. Give reasons why cables are twisted. (2 Marks)
3. LAN architecture popularly utilizes Ethernet as the standard for cabling computers in a network. Give the hardware requirements needed for the construction of an Ethernet network. (4 Marks)
4. Ethernet uses CSMA/CD to transmit the data frames. What is CSMA/CD and how does it work? (1 Mark)