UNIVERSITY REGULAR EXAMINATIONS

2013/2014 ACADEMIC YEAR

3RD SEMESTER EXAMINATION

COURSE CODE: ICT 724

COURSE TITLE: COMPUTER NETWORKS

DATE: 19TH AUGUST, 2014   **TIME: 9:00A.M.-11:00P.M.**

INSTRUCTIONS TO CANDIDATES

Answer question ONE and any other two questions

1. (a) Write the following abbreviations in full (5 mks)
   (i)   ATM
   (ii)   MPEG
   (iii)   SNMP
   (iv)   ISO
   (iv)   TCP/IP
   (b) Name four types of data that are transported on the internet (4mks)
   (c) Distinguish between:
        i.)   Simplex data flows and half duplex data flows (2Mks)
        ii.)   Broadcast and multicast data communication (2mks)
        iii.)   Connection-oriented (CO) and connection less (CL) network. (2mks)
        iv)   E-mail client and e-mail server. (2 mks)
   (d) What is the importance of layering in a computer network? (2mks)
   (e) What is a network protocol? (1mk)
   (f) How does IP differ from ATM (4 Mks)
   (g) What is the function of the following commands in UNIX network programming with TCP/IP? Give the syntax of each of the command.
        i)   The host name command. (2 mks)
        ii)   The ifconfig command. (2mks)
        iii)   The ping command. (2 mks)

2. a) Draw a diagram to show the layers of OSI architecture (4 mks)

   b) Describe the internet architecture showing the layers and the protocols associated with each layer (16 mks)

3. a) What is data encryption? (2 mks)
   b) Describe the three types of cryptographic algorithms (18 mks)

4. (a) What is data compression? (2mks)
   (b) State the importance of data compression? (2 mks)
   (c) Name three lossless data compression algorithms. (3 mks)
   (d) Describe the application of any one of the lossless data compression algorithms stated in 4(c) above (13 mks)

5. a) What is network participant authentication? (2 mks)
   b) Describe the three protocols for network participant authentication (18 mks)