KABARAK UNIVERSITY

UNIVERSITY EXAMINATIONS

2009/2010 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

COURSE CODE: **COMP 312**

COURSE TITLE: **COMPUTER NETWORKS**

STREAM: **SESSION VIII**

DAY: **THURSDAY**

TIME: **2.00 – 4.00 P.M.**

DATE: **08/04/2010**

INSTRUCTIONS:

ANSWER QUESTION ONE AND ANY OTHER TWO.

PLEASE TURN OVER

QUESTION ONE (30 MARKS)

a) What is meant by Computer Network? (2 marks)

b) Explain all the types of networks in to details giving appropriate examples in each case. (6 marks)

c) Define the following terms:-

i) Internet
ii) Intranet
iii) Extranet (3 marks)

d) Differentiate between a router and a hub (2 marks)

e) Explain the following in details citing the advantages of each:-

i) Circuit switching
ii) Packet switching

(7 marks)

f) What is signal leakage? (1 marks)

g) Each type of transmission media has special characteristics that make it suitable for a specific type of service. Discuss these characteristics into details with valid examples in each case. (5 marks)

h) Describe the features of an Ethernet technology (4 marks)

QUESTION TWO (20 MARKS)

a) What is meant by the term network security? (1 mark)

b) Discuss types and sources of security threats in a network. (9 marks)

c) Explain **four** advantages of using a fibre optic cable (5mks)

d) Define a Protocol? (1 mark)

e). Differentiate between modulation and multiplexing (4 marks)

QUESTION THREE (20 MARKS)

a) Define Carrier Sense Multiple Access (CSMA). (2 marks)

b) Discuss the types of CSMA bringing clear differences in each case? (8 marks)

c) What is Transmission impairment? Discuss all the transmission impairments (3 marks)

d) What are 3 factors in any network which could cause congestion? (3 marks)

e).Briefly Explain various types network topologies (4 marks)

QUESTION FOUR (20 MARKS)

a) Discuss the following terms in details bringing out advantages of each:- (9 marks)

i). Carrier sense multiple access with collision detection (CDMA/CD)

ii) Carrier sense multiple access with collision avoidance (CDMA/CA)

b) Explain the differences between a datagram and virtual circuit (2 marks)

c) Discuss the TCP functions (4 marks)

d) What do you understand by simplex, half-duplex, full-duplex modes? Explain with relevant examples (5 marks)