

2022/2023 SECOND SEMESTER
COURSE CODE: COMP 226
COURSE TITLE: DATA COMMUNICATIONS
DURATION: 3HRS

SECTION A ANSWER ALL QUESTIONS IN THIS SECTION (31 MARKS)

QUESTION ONE

- (a) From administrator's point of view, what is a network? (2mks)
- (b) Outline Four advantages of a network (4mks)
- (c) What is the role of physical layer? (2mks)
- (d) What is a virtual LAN? (2mks)
- (e) What is hybrid topology? State its main advantage (3mks)
- (f) What is transmission media? (3mks)

QUESTION TWO

- (a) What is secretkey encryption? (4mks)
- (b) State three factors affecting channel capacity (3mks)
- (c) Give the three kinds of digital-to-analog conversion (3mks)
- (d) What is multiplexing? (3mks)
- (e) A switch can be divided into two major categories. Name them (2mks)

SECTION B ANSWER ANY THREE QUESTIONS MARKS (39 MARKS)

QUESTION THREE

- (a) With the aid of diagrams, explain the following types of computer network topologies:
 - (i) Bus topology (2mks)
 - (ii) Tree topology (2mks)
- (b) What is the computer system? (2mks)
- (c) State four ways in which networks are classified (3mks)
- (d) State two advantages of star topology (4mks)

QUESTION FOUR

- (a) All security threats are intentional. What is the meaning of this statement? (1mk)
- (b) State and explain five security threats (12mks)

QUESTION FIVE

- (a) Under analog transmission, explain the following :
 - (i) Bandpass (2mks)
 - (ii) Low-pass (2mks)
- (b) State three characteristics of an analog signal (3mks)

- (c) State and explain the three kinds of digital-to-analog conversions (6mks)

QUESTION SIX

- (a) Explain the following switching techniques:
- (i) connectionless (2mks)
 - (ii) connection oriented (2mks)
- (b) Explain the following:
- (i) Circuit switching (3mks)
 - (ii) Message switching (3mks)
 - (iii) Packet switching (3mks)

QUESTION SEVEN

- (a) With the aid of diagrams, state and explain THREE types of errors (9mks)
- (b) Explain the following error correction mechanisms:
- (i) Error detection (2mks)
 - (ii) Parity Check (2mks)

- iv) 155
- b) Outline differences between client side and server side scripting languages. Use appropriate examples. (4 marks)
- c) Describe any four security issues that can arise when browsing the internet (4 marks)

QUESTION FIVE (12 MARKS)

- a) Write HTML code to generate the following table (4 marks)

SUVs		
Ford	2012	Expedition
	2011	Explorer
Chevrolet	2009	Suburban
	2013	Tahoe

- b) Illustrate and explain the functions of the TCP/IP protocol stack (8 marks)

QUESTION SIX (12 MARKS)

- a) Write the code to insert the following (2 marks)
- Trademark
 - Copyright
- b) Differentiate between the following (2 marks)
- Colspan
 - Rowspan
- d) Write HTML code to produce the form below (8 marks)

Introduce Yourself

First Name:

Last Name:

Eye Color:

☒ Brown

☐ Blue

☐ Green

☐ Other

My Pets:

☐ Dog

☒ Cat

☐ Hamster

☐ Fish

Foreign Languages Spoken:

French:

Tell us some more about yourself: