



Professional Qualification in COMPUTER ENGINEERING Level 4 Diploma

UNIT 4 – NETWORKING TECHNOLOGY

Question 1

- (a) **Describe TWO** functions of the data link layer. (10 marks)
- (b) **Explain** how the functions of a LAN exploit the physical and data link layers. (10 marks)

Question 2

- (a) **Describe** the process of Ethernet Carrier Sense Multiple Access/Collision Detect in half duplex environments. (10 marks)
- (b) **Compare** and **contrast** switching in software with switching in hardware. (10 marks)

Question 3

- (a) **Explain** how ping and traceroute applications verify Internet paths are operational. (10 marks)
- (b) **Describe** the process of first-hop gateway redirection. (10 marks)

Question 4

- (a) **Describe** the purpose of the session layer. (10 marks)
- (b) **Compare** and **contrast** the authentication and dialogues control features of the OSI model and TCP/IP. (10 marks)

Question 5

- (a) **Describe** the role and design of PKI encryption systems such as SSL and TLS in the presentation layer. (10 marks)
- (b) **Discuss** the serialisation of complex data structures and their deployment in the presentation layer. (10 marks)