



# Professional Qualification in COMPUTER ENGINEERING Level 4 Diploma

## UNIT 4 – NETWORKING TECHNOLOGY

### Question 1

- (a) **State** the purpose of the 'physical' layer of the OSI 7-layer network model. (2 marks)
- (b) **State** the purpose of the 'data link' layer of the OSI 7-layer network model. (2 marks)
- (c) **Explain why** the physical and data link layers are different layers. (8 marks)
- (d) **Describe how** a computer network establishes a connection to a communications medium. (8 marks)

### Question 2

- (a) **State** the purpose of a network address. (2 marks)
- (b) **Describe** the general format of a network address. (6 marks)
- (c) **Compare** IPv4 and IPv6. (12 marks)

### Question 3

- (a) **Describe** what segmenting and desegmenting are. (4 marks)
- (b) **Explain** which protocol layer is responsible for segmenting and desegmenting. (4 marks)
- (c) **Contrast how** TCP and UDP differ in terms of reliability. (12 marks)

### Question 4

- (a) **State** the meaning of the term 'packet sniffer'. (2 marks)
- (b) **Explain how** packet sniffing on ethernet and wifi networks differ. (6 marks)
- (c) **Explain THREE** reasons **why** packet sniffers may be used on a network. (12 marks)

### Question 5

**Illustrate** the key steps in configuring a firewall. Use diagrams and/or examples to support your answer. (20 marks)