



**SLIATE**

**SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION**

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

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**Higher National Diploma in Information Technology  
Second Year, First Semester Examination – 2017  
HNDIT2322– Data Communication and Network II (New)**

**Instructions:**

**Answer five (5) questions only.**

**No. of questions : 06**

**No. of pages : 03**

**Time : Three (3) hours**

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**Question 01**

**[20 Marks]**

- a) What is meant by internetwork? [4 Marks]
- b) Define simplex, half duplex and full duplex communication models with examples. [6 Marks]
- c) Contrast differences between star network topology and bus network topology [3 Marks]
- d) Discuss components of a communication model [7 Marks]

**Question 02**

**[20 marks]**

- a) Explain 2- tier Client/Server model [4 Marks]
- b) Discuss the communication types given below: [6 Marks]
  - i. Unicasting
  - ii. Multicasting
  - iii. Broadcasting
- c) Describe the functionality of a router? [6 Marks]
- d) Explain benefits of 3-tier over 2-tier Client/Server model [4 Marks]

**Question 03****[20 Marks]**

- a) List the layers in TCP/IP reference Model. [4 Marks]
- b) Write down the functions of 2 layers given in part a) above. [8 Marks]
- c) Briefly explain the following protocols. [2 Marks]
- i. IP
  - ii. ICMP
- d) What is the uses of the following protocol: [2 Marks]
- i. CSMA/CD
- e) Briefly explain the following Local Area Network (LAN) standards. [4 Marks]
- i. Ethernet
  - ii. WLAN

**Question 04****[20 Marks]**

- a) Explain types of VPN [6 Marks]
- b) What is meant by tunneling in VPN? [4 Marks]
- c) List 2 protocols used in VPN? [4 Marks]
- d) Briefly explain the Network Area Storage (NAS). [6 Marks]

**Question 05****[20 Marks]**

- a) What is meant by Static Routing? [4 Marks]
- b) Explain features of routing protocols given below:
  - i. RIP
  - ii. OSPF [6 Marks]
- c) Explain the necessity of configuring default route [4 Marks]
- d) Discuss main parts of static route operation [6 Marks]

**Question 06****[20 Marks]**

Write short notes for the following titles.

**[5 x 4=20 Marks]**

- a) Bridges
- b) Fiber-Optic Cable
- c) Communication Model
- d) 100VG-AnyLAN