



SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

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

Higher National Diploma in Information Technology

First Year First Semester Examination – 2022(New)

HNDIT 1032-Computer and Network System

Instructions for candidates:

Time: Three (03) hours

Answer any five Questions

All Question carry equal marks

No. of question : 06

No of pages : 03

Q1)

- I. Briefly explain the following type of computers. (04 marks)
 - a. Microcomputers
 - b. Supercomputers
- II. Give 04 examples for mechanical computers. (04 marks)
- III. Write down the main features of following computer generations. (06 marks)
 - a. Second generation
 - b. Third generation
- IV. Explain the usage of computers for government activities with example. (06 marks)

(Total 20 marks)

Q2)

- I. Convert following data units into bits. (04 marks)
 - a. 16KB
 - b. 2GB
- II. Represent following numbers with positional number system. (04 marks)
 - a. 101101_2
 - b. $4ABF_{16}$
- III. Convert the following numbers into given number system. (06 marks)
 - a. 187_{10} to Binary
 - b. 245_8 to Decimal
 - c. ABE_{16} into Octal
- IV. Express the following word using ASCII code. The decimal value of ASCII A=65.

ATI

(06 marks)

(Total 20 marks)

Q3)

- I. Draw the circuit and truth table for Half adder. (04 marks)
- II. Write down the Boolean expression for following Boolean algebraic laws . (04 marks)
 - a. Distributive law
 - b. De Morgan's law
- III. Identify the symbol, truth table and Boolean expression for following gates. (06 marks)
 - a. NOT
 - b. NAND
 - c. XOR
- IV. Draw the Karnaugh maps and simplify the following equation. (06 marks)

$$F = \bar{A}BC + A\bar{B}C + AB\bar{C} + ABC$$

(Total 20 marks)

Q4)

- I. Compare and contrast DRAM and SRAM. (04 marks)
- II. What is ROM? Give 02 type of ROM. (04 marks)
- III. Briefly explain the purpose of following CPU units. (06 marks)
 - a. Arithmetic Logic Unit (ALU)
 - b. Control Unit (CU)
 - c. Registers
- IV. Identify the usage of following motherboard ports and slots. (06 marks)
 - a. PS2
 - b. RJ45
 - c. Parallel
 - d. HDMI
 - e. AGP
 - f. PCI

(Total 20 marks)

Q5)

- I. What is an application software? Give 02 examples. (04 marks)**
- II. Name four (04) major functions of an Operating System. (04 marks)**
- III. List the main features of Graphical User Interface (GUI) and Command Line Interface (CLI). Give examples for GUI and CLI. (06 marks)**
- IV. What are the purposes of following Operating System utilities? (06 marks)**
 - a. Disk Defragment**
 - b. Compression Tool**
 - c. Performance and Monitoring Tool**

(Total 20 marks)

Q6)

- I. Draw the diagrams and give examples for following transmission modes. (04 marks)**
 - a. Simplex**
 - b. Half Duplex**
- II. What is network topology? Give 02 examples. (04 marks)**
- III. Briefly explain guided and unguided transmission media with examples. (06 marks)**
- IV. What are the purposes of following network devices? (06 marks)**
 - a. NIC**
 - b. Switch**
 - c. Router**

(Total 20 marks)