IT1032 Computer & Network System
1st year SEM I 2021
Model Paper

Instructions:
Each question carries equal marks.
Duration: 03 hours

Q1)

  I.   Compare and contrast non-positional (non-weighted) number systems and positional number systems (weighted) with suitable examples. **(04 marks)**

  II.   Write the expanded form (sum of products) for the following numbers. **(06 marks)**
        A. 47.33210
        B. 0.33518
        C. 100010112

  III.   Perform the following binary arithmetic operations. **(04 marks)**
        A. 10011+1110
        B. 11000-1111

  IV.   Convert the following decimal numbers into binary numbers. **(06 marks)**
        A. 139
        B. 0.625

(Total 20 marks)

Q2)

  I.   Briefly compare the Analog data and Digital data with suitable examples. **(04 marks)**

  II.   Convert the following hexadecimal numbers into binary format. **(06 marks)**
        A. ABC7
        B. A21

  III.   Convert the following decimal numbers into octal numbers. **(04 marks)**
        A. 175
        B. 0.432

  IV.   Perform the following calculations. **(06 marks)**
        A. $162_8 + 537_8$
        B. $2BF_{16} + 54A_{16}$

(Total 20 marks)

Q3)

    I.   Draw the truth table for following Logic gates.   **(04 marks)**
         A. NAND
         B. XOR

    II.   Write Boolean algebra equations for following Boolean Algebra law?   **(06 marks)**
         A. Associative Law
         B. Commutative Law

    III.   Simplify the following Boolean expression with Algebra law.   **(04 marks)**

$$Z = (\underline{A} + C).(B + \underline{D})$$

    IV.   Draw the Karnaugh map and simplify the following equation.   **(06 marks)**

$$Z = \underline{A}B + B\underline{C} + BC + A\underline{B}\underline{C}$$

(Total 20 marks)

Q4)

    I.   What is non-volatile memory and give two examples?   **(04 marks)**
    II.   Briefly explain following terms   **(06 marks)**
         A. SRAM
         B. DRAM
         C. Cache

    III.   What are the problems in 1st generation computers?   **(04 marks)**

    IV.   Device manager is one of the important utility software in the modern Operation System. What is the importance of having a device manager?   **(06 marks)**

(Total 20 marks)

Q5)

    I.   Mention two advantages of Computer Networks.   **(04 marks)**
    II.   Briefly explain at least five key elements of a Communication System?   **(06 marks)**
    III.   Briefly compare Peer to Peer networks and Client-Server Network with suitable examples.   **(04 marks)**
    IV.   Compare Guided media and Unguided media in brief and provide at least two examples for each category**.   (06 marks)**

(Total 20 marks)

Q5)

    V.   Mention two advantages of Computer Networks.   **(04 marks)**
    VI.   Briefly explain at least five key elements of a Communication System?   **(06 marks)**
    VII.   Briefly compare Peer to Peer networks and Client-Server Network with suitable
          examples.   **(04 marks)**
   VIII.   Compare Guided media and Unguided media in brief and provide at least two examples
          for each category.   **(06 marks)**

(Total 20 marks)