

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

**Instructions:**

Each question carries equal marks.

Duration: 03 hours

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**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)**