Instructions

1. Home work to be written in assignment book
2. write it one time
3. It should be in handwritten
4. Date of Submission : 14|10|2019.

Assignment

Class : II PU Subject : Computer Science.

① Explain the characteristics of motherboard

② State and prove demorgan's law using truth table

③ What is the purpose of UPS? Mention different types of UPS.

④ Using K-map, simplify $F(A,B,C,D) = m_1 + m_2 + m_4 + m_5 + m_9 + m_{11} + m_{12} + m_{13}$.

⑤ Simplify $F(A,B,C,D) = \Sigma(1,2,3,5,7,8,9,11,13,15)$ using K-map.

⑥ Simplify $F(P,Q,R,S) = \pi(0,1,2,3,4,6,8,10,12,14)$

⑦ Convert the expression to canonical SOP form
$x + xy + yz$

⑧ Convert the expression to canonical POS form
$(x+\bar{y})(x+z)(\bar{z})$

⑨ Prove ⓐ $(x+y)(x+z) = x + yz$
ⓑ $x + xy = x$

⑩ Simplify $F(A,B,C,D) = \Sigma(0,4,6,7,8,12,14,15)$ using K-map

(11) Write the standard symbol and truth table for AND, OR, NOT, NOR, XOR, XNOR, NAND gates

(12) Realize AND, OR, NOT gate using universal gates (NAND and NOR)

(13) Draw the logic circuit diagrams for the following:

(a) $\bar{x}\bar{y} + xy\bar{z} + y\bar{z}$

(b) $(\overline{x+y})(x+y+\bar{z})(\bar{y})$

(14) Draw the logic circuit diagram for the expression only using NOR gate

$$(x+y+z)(x+\bar{y})(y+\bar{z})$$

(15) Simplify $F(w,x,y,z) = \Sigma(0,4,8,9,10,11,12,13,15)$

16. What is primitive data structure? Explain different operations performed on primitive data structures.
17. Explain any 5 operations performed on non primitive data structure.
18. Write an algorithm to insert an element in an array.
19. Write an algorithm to search an element using binary search technique.
20 Explain the memory representation of two dimensional array.
21. What is stack? Write an algorithm for PUSH and POP operation.
22. Write an algorithm to insert an element into a queue.
23. Write an algorithm to delete an element from a queue.
24. Give the applications of queue.
25. Explain the characteristics of OOP.
26. Explain the advantages and disadvantages of OOP.
27. Write the differences between procedural programming and object oriented programming.
28. Write the applications of OOP.
29. Define class definition and class declaration. Write its general Syntax and example.
30. Explain member function defining inside the class definition and outside the class definition with example program.