B.Sc. Sem V (PHYSICS)

Paper: 503

Title : Digital Electronics and 'C' Programming

Q:1   What is called logic gates ? give truth table of NOR gate having three inputs. Explain working of NOR gate circuit designed with diode and transistor. Explain it with only transistor.   [14]

OR

Q:1   [a]   Explain working of transistor based AND gate with its truth table and symbol.   [07]

[b]   Explain Full adder   [07]

Q:2   Write Boolean expression, reduce it using mapping and implement in NOR logic:
F= m(0, 1,,4,5, 6,7,11,12,15) using SOP method ?   [14]

OR

Q:2   [a]   Reduce the following Bollean expression   [07]

(i) $y = \overline{A} + \overline{\overline{AB}} + \overline{A+BC}$

(ii) $y = \overline{A+A\overline{B}} + \overline{\overline{A+A\overline{B}}} \, C$

[b]   Without reducing draw logic circuit using OR/AND/NOT gates   [07]

(i) $y = \overline{A}B\overline{C} + \overline{\overline{A}+B+\overline{C}}$

(ii) $y = (A+\overline{B}+\overline{C})(\overline{\overline{B}\overline{C}})$

Q:3   Find out Final Value of following Statement.   [14]

int I = 5,j=5, k=7;

float a=3.5, b=5.5, c=2.5;

(a) a= b-i/j +c/j

(b) a= (b-i)/(j+c)/j

(c) a= b −((i+j)/(k+i))*c

(d) a= b-i+j/k+i*c

(e) a =b+1%1+c

(f) a=(b+1)%(1+c)

OR

Q:3(A) Write a program in C language to find a volume of Cylinder of radius R and length L.   [07]

Q:3(B) Write a program in C language to find $5p^2+2p+8$.   [07]

Q:4   Write a program in C language to pick largest number of three numbers   [14]

OR

Q:4(A) Flow chart to pick the smallest number of a set of three numbers.   [07]

Q:4(B) write a program for following pattern using for loop.   [07]

        1

        1 2

        1 2 3

        1 2 3 4

નોંધ:
- પ્રશ્નપત્રનો સમય ૧.૩૦ કલાકનો રહેશે.
- પ્રશ્નપત્રમાં ૪ પ્રશ્નોમાંથી કોઇ પણ ત્રણ પ્રશ્નોના જવાબ આપવાનો રહેશે.
- દરેક પ્રશ્નના ગુણ એકસરખા (૧૪ માર્કના) રહેશે. પ્રશ્નપત્ર કુલ ૪૨ માર્કસ નું રહેશે.