Part–III   3-Tier

2017

ELECTRONICS

PAPER—VII

(Honours)

(PRACTICAL)

Full Marks : 100

Time : 6 Hours

The figures in the right-hand margin indicate full Marks.

Group—A

Answer any *one* question.

1. (a) Draw the circuit diagram of a two input 'OR' gate using discrete components. Implement it on a bread board and draw its truth table.

   (b) Implement 'NOT' gate on a bread board using discrete components. Draw its truth table.

(c) Using (a) and (b), implement a 'NOR' gate and verify its truth table.

15+10+10

2. (a) Construct a Half Adder circuit using fundamental gates and verify its truth table

(b) Constant the Half Adder circuit using NAND gates only. verify its truth table.

20+15

3. (a) Construct an encoder circuit which will encode decimal numbers 0 to 7 to its equivalent binary number. Verify the results and draw its truth table.

(b) Design a 8 : 1 Multiplexer using two 4 : 1. Multiplexer and necessary logic gates.

20+15

4. Design a left/right 4-bit shift register using J–K flip flop. Verify your data for serial in serial out mode. Draw the timing diagram. 35

5. Draw a asynchronous 4 bit decade up counter using J–K flip-flop and verify its results. Draw the suitable timing diagram. 35

6. Write an assembly language program to subtract two eight-bit data taking from two different memory location and store the result to another memory location. Verify your program tor two set of data.   35

7. (a) Design a non-inverting amplifier of gain 10 using an OPAMP. Draw the input-out graph.

   (b) Apply convert this circuit to an Adder and study its performance.

   20+15

8. Study the performance of a differential amplifier using an OPAMP. Draw the necessary circuits, record input-output data.   35

9. Design an astable multivibrator using transistors with a frequency of your choice and implement it on a bread board. Verify experimental and theoretical oscillating frequency.   35

10. Write an assembly language program which will check a data block and will store those data in decending order starting from another memory location. Verify your results.

Marks Distribution :

		Marks			
Experiment	:	35 + 35	=	70
Viva-voce	:	10 + 10	=	20
Laboratory Note Book	:	5 + 5	=	10

Total Marks : 100

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