2019

UG 3rd Semester (Honours) Examination

PHYSICS

Paper - C7P

(Digital System and Application Lab.)

[Practical]

Full Marks : 20   Time : 3 Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.

Perform *one* Experiment.   1×15

1. Design a NOT circuit using a transistor and other components. Study its transfer characterisrtics.

    (a) Theroy   5

    (b) Implementation of the circuit, recording of data and drawing of transfer characteristics curve. 8

    (c) Result and discussions.   2

2. Design AND, OR, EX-OR gates using IC 7400 and vcerify their truth tables.

[Turn Over]

(a) Theory   2+2+2

(b) Implemention of the circuits and taking data.

2+2+2

(c) Result and discussions.   3

3. Design a 4 bit binary adder and check the result for three set of data.   6

(a) Theory   6

(b) Implementaion of the circuit and recording of data.   7

(c) Result and discussions.

4. Design an adder subtractor circuit using full adder IC and check the result of addition and subtraction for two set of data

(a) Theory   6

(b) Implemention of the circuit and recording of data.   7

(c) Results and discussions.   2

5. Design a R.S flip-flop using NAND gates.

(a) Theory

(b) Implementation of the circuit and recording of data.

(c) Results and discussions.

6. Design a Master slave F-F using NAND gate ICS and demonstrate the excitation table   7

   (a) Theory   6

   (b) Implementation of the circuit and recording of data.   7

   (c) Results and discussions.   2

7. Design a 4 bit counter using J-K F-F ICS and study the timing diagram.

   (a) Theory   6

   (b) Implementation of the circuit and recording of data.   7

   (c) Result and discussions.   2

8. Design a 4 bit shift register PISO using D type/JK F-F ICS

   (a) Theory   6

   (b) Implementation of the circuit and recording of data.   7

   (c) Results and discussions   2

9. Design a monostable multivibrator using 555 timer IC with ON times 30 sec and 50 Sec.

   (a) Theory   6

[Turn Over]