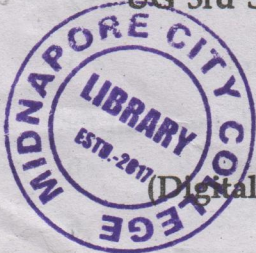


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UG/3rd Sem/PHSH(H)/Pr/19

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 characteristics.

(a) Theory 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 verify their truth tables.

[Turn Over]

(2)

- (a) Theory 2+2+2
- (b) Implementation 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) Implementation 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.

(3)

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]

(4)

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

(c) Results and discussions 2

10. Design an astable multivibrator of frequency 10 KHz with 2/3 rd. duty cycle using 555 timer IC.

(a) Theory 6

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

(c) Results and discussions 2

Distribution of marks :

LNB - 02

Viva-Voce - 03

Experiment - 15
