Total No. of printed pages = 3

END SEMESTER EXAMINATION – 2022

Semester : 4th

Subject Code : Co-406

DIGITAL ELECTRONICS

Full Marks – 35

Time – 1½ hours

The figures in the margin indicate full marks
for the questions.

Instructions :

1. *All* questions of PART – A are compulsory.

2. Answer any *two* from Q. Nos. 2 to 4 and Q. No. 5 is compulsory of PART – B.

PART – A

Marks – 12

1. Fill in the blanks :   1×12=12

(a) An Inverter is also known as <u>NOT</u> gate.

(b) NAND and NOR gates are also known as <u>universal</u> gates.

[Turn over

(c) <u>Logic gate</u> operates on the principle of Boolean algebra.

(d) The basic storage element in a digital system is <u>flip flop</u>

(e) A counter can be described as a <u>pulse</u> machine.

(f) Flip-flop is a <u>sequential</u> logic circuit.

(g) A ring counter has <u>2</u> flip-flops.

(h) What Arithmatic circuit is used to subtract ? Binar

(i) <u>Rom</u> are used to store data that generally can not be easily changed.

(j) CD-ROM stands for <u>Compact Disk Read only memory</u>

(k) Registers and Counters are designed using <u>flip flop</u>.

(l) Multiplexer is represented by <u>mux</u>.

PART – B

Marks – 23

2. (a) Prove the following using Truth table : 2
   A + A'B = A + B.

(b) Draw the logic diagram for the Boolean expression Y = AC ++ A'B using basic gates.

2

(c) Draw OR and AND gate using NAND gate only.   2+2=4

3. Classify digital ICs. Write their characteristic features.   8

4. (a) What are the differences between Combinational logic circuit and Sequential logic circuit.   4

   (b) What is Karnaugh map ? Define Pair, Quad and Octet.   1+3=4

5. Write short notes on any *two* :   3½×2=7

   (a) Half adder

   (b) Applications of LCD and LED displays

   (c) Semiconductor memory

   (d) TTL Circuit

   (e) Seven segment display.