18CAU02

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BCA DEGREE EXAMINATION DECEMBER 2019
(First Semester)

Branch - COMPUTER APPLICATIONS

COMPUTER SYSTEM ARCHITECTURE

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 1 = 10)

Numbers are represented in digital computer through a__J_____.
(i) Binary operation (ii) Arithmeticoperation
(iii) Binary code (iv) Digital operation

The basic logic gate whose output is the complement of the input is the
(i) OR gate (ii) AND gate
(iii) INVERTER gate (iv) XOR gate

Boolean algebra does not have_____ inverses.
(i) Boolean (ii) Additive
(iii) Complement (iv) Universe

Total number of Min terms in Three variable map is
(i) 4 (ii) 3
(iii) 8 (iv) 5

Complements are used in digital computers for simplifying _____operation.
(i) subtraction (ii) addition
(iii) multiplication (iv) division

A half adder circuits need two binary inputs and_____ binary outputs.
(i) one (ii) two
(iii) three (iv) four

There are main types of sequential circuit,
(i) zero (ii) one
(iii) two (iv) three

An n-bit register has a group of flip flop.
(i) n (ii) n+1
(iii) n-1 (iv) n+2

Status bit conditions are sometimes called as
(i) zero bits (ii) flag bits
(iii) binary bits (iv) both (i) & (ii)

10 In immediate addressing mode is given in instruction itself.
(i) address (ii) code
(iii) data (iv) op code

Cont...

SECTION - B (25 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 5 = 25)

11 a Explain Gray code with example.

OR

b. Discuss the NAND operation.

12 a Explain the functions of Encoder.

OR

b Write note on Don't care condition.

13 a Explain RS flip flop with truth table.

OR

b Describe Binary addition with example.

14 a Write notes on synchronous counters.

OR

b Describe the function of Ring counter.

15 a Explain -Instrijption formats.

OR

b Write notes on1-0 processor.

SECTION -C (40 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 8 = 40)

16 a Explain OR gate with truth table.

OR

b Discuss about moving and storing information.

17 a Explain sum of product with suitable example.

OR

b Describe the function of De Multiplexers with truth table.

18 a Discuss the Edge Triggered R S flip flop.

OR

b Illustrate the Binary Subtraction with example.

19 a Describe the function of 54/74198 shift register with logic diagram.

OR

b Build logic diagram and describe the function of MOD3 counter.

20 a Discuss about the Stack Organization with diagram.

OR

b Briefly Explain Asynchronous Data transfer.

Z-Z-Z END