3002

B.C.A. (SEM. - I) EXAMINATION, 2025-26

NEP - 2020

COMPUTER APPLICATION

PAPER / COURSE NAME : COMPUTER SYSTEM ARCHITECTURE

PAPER-II

COURSE CODE - S020102T

[Time : 2 Hours] [Maximum Marks : 75]

Instructions : Attempt all sections as per instructions.

Section - A

Note: Attempt all questions. Give answer of each question in about 50 words.

(10 × 3 = 30)

Q1.

(a) Define Number System? Discuss its various types?

(b) Define the full form of CISC and RISC?

(c) Find out the sum of $(2AF)_{16} + (3B)_{16} = (?)_2$?

(d) Find the sum of $(100.11)_2 + (1.101)_2 = (?)_2$?

(e) Define the role and importance of cache memory?

(f) Define various features of Input-Output Processors?

(g) Differentiate between combinational circuits and sequential circuits?

(h) Discuss the advantages of Assembly Language over Machine Language?

(i) Explain the difference between RAM and ROM Memory?

(j) Discuss various types of logical operations in Boolean Algebra?

SECTION – B

Note: Attempt any four questions. Give answer of each question in about 150 words. [6 x 4 = 24]

Q2. Draw and explain a common bus system of 4 registers?

Q3. Explain stack organization of CPU?

Q4. What is Adder and Subtracter? Explain it with circuit diagram and truth table?

Q5. Define Addressing Modes? Explain at least four addressing modes?

Q6. Discuss basic computer register with their size and draw register organization with memory bank?

Q7. What are instruction formats? Discuss various types of instruction formats with examples?

Q8. Define Mapping? Discuss its all-types Mapping?

SECTION – C

Note: Attempt any Two questions. Give answer of each question in about 450 words. [10.5 x 2 = 21]

Q9. Define XOR and XNOR logic gates with logic gate diagram and truth table chart?

Q10. What are Micro Operations? Explain its types in detail?

Q11. Discuss Processor Pipelining? Explain it in detail?

Q12. Define DMA? Discuss its working and explain it types?

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