Roll No............................

Total No. of Questions : 13]   **[Total No. of Pages : 02**

Paper ID [A0309]

(Please fill this Paper ID in OMR Sheet)

B.Sc. IT (301) (S05) (LE) (N) (Sem. - 3rd)

COMPUTER SYSTEM ARCHITECTURE

Time : 03 Hours   **Maximum Marks : 75**

Instruction to Candidates:

     1)   Section - A is **Compulsory**.

     2)   Attempt any **Nine** questions from Section - B.

Section - A

Q1)   *(15 × 2 = 30)*

     a)   What is an effective address?

     b)   Define Integrated Circuit.

     c)   Compare vectored and non-vectored interrupt.

     d)   Define Software Routines.

     e)   Why there is a need of I/O interface?

     f)   Differentiate between half duplex and full duplex transmission.

     g)   What is content addressable memory?

     h)   What is the procedure to write data into cache memory?

     i)   List the differences between Logical and Physical address.

     j)   What is purpose of Accumulator?

     k)   Why read and write control lines in DMA controller are bi-directional.

     l)   What is Port? Give some examples.

     m)   Write methods for memory protection.

     n)   What is locality of reference?

     o)   Differentiate between I/O and Memory bus.

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Section - B

(9 × 5 = 45)

Q2) What is DMA? Explain DMA controller with the help of block diagram.

Q3) Differentiate between Synchronous and Asynchronous communication.

Q4) Explain various types of instructions of computer.

Q5) Discuss various peripheral devices attach to a computer system.

Q6) Explain the Instruction cycle of a program.

Q7) What is Input-Output Processor (IOP)? Explain the concept of CPU-IOP communication with the help of diagram.

Q8) Explain various Addressing mode techniques.

Q9) Convert this "A+B*[C*D+E*(F+G)]" arithmetic expression from infix to reverse polish notation.

Q10) Differentiate between Source-initiated and Destination-initiated transfer using handshaking.

Q11) Explain diagrammatically the memory hierarchy in a computer system.

Q12) How PUSH and POP operations are performed on Stack?

Q13) Define the following:
  (a) Micro operation.
  (b) Micro instruction.
  (c) Micro program.
  (d) Microcode.

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