BACHELOR OF COMPUTER APPLICATION
Third Semester
Computer Organization and Architecture
(BCA-14)

Duration: 3Hrs.   **Full Marks: 70**

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.   **Marks: 50**

1. Answer the following questions (any *five*):   2×5=10
   a) What do you mean by Computer Organization?
   b) Write down the functions of Control unit of Computer.
   c) What is Program I/O?
   d) What is Computer Architecture?
   e) How Primary Memory is different from Secondary Memory?
   f) How can you increase the speed of Computer?
   g) What are the types of Rom? Explain.

2. Answer the following questions (any *five*):   3×5=15
   a) Explain the Concept of DMA with suitable diagram.
   b) What do you mean by Virtual Memory? Briefly explain.
   c) How Flynn Classify the Computer? Explain.
   d) What are the functions of ALU?
   e) Explain briefly RAID Technology.
   f) Explain Different types of Bus of Computer system.
   g) Explain Booth's Algorithm with the help of a flow chart.

3. Answer the following questions (any *five*):   5×5=25
   a) Write the brief History of Computer system.
   b) Explain different types of addressing mode with suitable example.
   c) What are the Component of Computer system? Explain each component with suitable
      diagram.
   d) What are the types of Page replacement algorithm? Explain each algorithm with the
      help of suitable example.
   e) Explain Memory Hierarchy of Computer system.
   f) Explain the different types of Instruction format with example.
   g) Explain the concept of Pipelining.

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(The figures in the margin indicate full marks for the questions)

Duration: 20 minutes   **Marks – 20**

PART A- Objective Type

Answer the following questions   **1×20=20**

1) To achieve parallelism, one needs a minimum of

   a.2 processors   b. 3processors   c. 4 processors   d. None of the above

2) The addressing mode used to an instruction of the form ADD X, Y is

   a. Absolute   b. Immediate   c. Indirect   d. Index

3) The three main Components of a digital computer system are

   a. Memory, I/O,DMA   b. Memory,CPU,I/O   c. ALU,CPU,Memory   d. None of the above

4) Von Neumann architecture is

   a. SISD   b.MIMD   c.SIMD   d.MISD

5) Which of the following page replacement algorithm suffers from Belady's Anomaly?

   a.FIFO   b.LRU   c.Optimal   d. LRU and Optimal

6) A typical application of MIMD is

   a. Railway Reservation   b. Weather Forecasting   c.Matrix Multiplication   d.All the above

7) Page fault occur when

   a. The page is not in the main memory   b. The page is in the main memory
   c.The page is corrupted by application software   d.None of the above

8) Which one of the following is not a registers

   a.Accumulator   b. Stack pointer   c. program counter   d.Buffer

9) Any instruction should have at least

   a. 2 operands   b.1 operands   c. 3 operands   d. None of the above

10) Virtual memory is

   a.An extremely Large main memory   b.An extremely large Secondary Memory
   c.An illusion of an extremely large memory   d.None of the above

11) The most relevant addressing mode to write position independent code is
   a.Direct   b. Relative   c. Indirect   d. None of the above

12) Use of Cache memory

   a. Make the Computing system faster   b. Reduce the Performance
   c. Give no impact on Performance   d. None of the above

13) The page replacement algorithm that sometimes leads to more page fault when the size of the memory is increment is

   a.FIFO   b.LRU   c.Optimal   d. None of the above

14) DMA stand for

   a. Direct Mode addressing   b.Direct Memory Access
   c.Direct Memory address   d.None of the above

15)Determine the number of page fault using LRU algorith ,when references to pages occur in t5he order-1,2,4,5,2,1,2,4(assume frame size=3) is

   a. 3   b.5   c. 4   d. None of the above

16) The first generation of Computer use

   a. Transistor   b. Vaccum Tube   c. Transistor and vaccum tube   d. None of the above

17) Primary Memory is _____ memory

   a. Volatile   b. Non-Volatile   c. Permanent   d. None of the above

18) The third generation computer use

   a. ICs   b. Vaccum Tube   c. Transistor and vaccum tube   d. None of the above

19) Hard disk is _____memory

   a. Volatile   b. Non-Volatile   c. Permanent   d. None of the above

20) Function of Pipelining is

   a. Increase the speed of Processors   b. Reduce the Performance
   c. Give no impact on Performance   d. None of the above

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