BCA
Third Semester
Computer Organization & Architecture
(BCA-304)

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

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

(PART-B: Descriptive)

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

Answer any *four* from *Question no.* 2 to 8
Question no. 1 is compulsory.

1. What do you mean computer organization and architecture? Explain the Von Neumann architecture.   3 + 3 + 4=10

2. What do you mean by normalization? How negative numbers are represented? Perform (15) + (- 6) using 1's and 2's complement.   2 + 2 + 6=10

3. Differentiate between programmed I/O and interrupt-initiated I/O. Explain direct memory access (DMA).   6 + 4=10

4. Discuss how the basic computer will recognise an instruction as memory reference or register reference or I/O instruction. List the registers for basic computer with their function.   6 + 4=10

5. Differentiate between the hardware control unit and micro programmed control unit. Write an assembly language program to add two numbers.   5 + 5=10

6. What is bus system? What are the different types of buses used in a computer system? Explain PCI bus.   2 + 1 + 7=10

7. Explain the memory hierarchy system with diagram. Discuss static and dynamic RAM.   6 + 4=10

8. Write the characteristics of RISC and CISC. Explain pipelining.   6 + 4=10

****

BCA
Third Semester
Computer Organization & Architecture
(BCA-304)

Duration: 20 minutes

Marks – 20

(PART A - Objective Type)

I. Choose the correct answer:

1×20=20

1. Reduced instruction set computers use

A. Hardware control

B. Micro programmed control

2. A group of wires that caries binary bits are called ---------------.

A. Register

B. Flip-flop

C. Decoder

D. Bus

3. A ---------------- is a combinational circuit that receives binary information from one of 2^n input data lines and directs it to a single output line.

A. Encoder

B. Decoder

C. Multiplexer

D. None of the above

4. Decomposing a sequential process into sub operations and executing each sub operation concurrently with each other is known as --------------------

A. Pipelining

B. Vector

C. Array

D. None of the above

5. Instead of giving the operand address, if operand is given directly in the instruction itself, then it is known as ----------------------------

A. Direct addressing

B. Indirect addressing

C. Immediate mode

D. All of the above

6. The ALU carries out arithmetic and logic operations. It processes .... numbers rather than decimal numbers.

A. decimal

B. hexadecimal

C. binary

D. octal

7. ---------------------- is a program that translates assembly language programme to machine language programme.

A. Compiler   B. Assembler

C. Interpreter   D. All of the above

8. The 1's complement of binary number 11010 is :

A. 00101   B. 00010   C. 00110   D. 11101

9. The register which keeps track of the execution of a program and which contains the memory address of the instruction currently being executed is known as

A. Index register   B. Memory address register

C. Program counter   D. Instruction register

10. How many number of bits are needed for an address in a 4096 words memory?

A. 16   B. 8   C. 12   D. 4

11. Which of the following is an example of non-volatile memory?

A. ROM   B. VLSI   C. LSI   D. RAM

12. A high speed device used in CPU for temporary storage during processing is called

A. a register   B. a bus   C. a data bus   D. all of the above

13. The hardware in which data may be stored for a computer system is called

A. Registers   B. Bus   C. Control unit   D. Memory

14. In magnetic disks, concentric circles on each surface is called -----------------

A. Tracks   B. Blocks   C. Pages   D. Sectors

15. Which of the following is not an octal number?

A. 32   B. 75   C. 16   D. 902

16. CPUs with hardwired logic control are

A. Intel 8085   ,B. Motorola 6802   C. Zilog 80   D. All of the above.

17. Devices that provide backup storage are called

A. Main memory   B. Auxiliary memory

C. Cache memory   D. None of the above

18. Examples of embedded computers are

A. microcontroller-based systems   B. digital signal processor-based systems

C. both (A) & (B)   D. none of the above

19. The 2' complement of 101010 is

A. 111111   B. 010110   C. 010101   D. 111000

20. Binary equivalent of $(23)_{10}$ is

A. 10111   B. 10001   C. 10111   D. 10010

****