EXAMINATION PAPER

FACULTY	:	**COMPUTER SCIENCE AND MULTIMEDIA**
COURSE	:	**BACHELOR OF INFORMATION TECGNOLOGY (HONS)**
YEAR/ SEMESTER	:	**FIRST YEAR / SEMESTER ONE**
MODULE TITLE	:	**BASIC COMPUTER ARCHITECTURE**
CODE	:	**BIT-112**
DATE	:	**APRIL 26-2019, FRIDAY**
TIME ALLOWED	:	**3 HOURS**
START	:	**1:00 PM**　　　　**FINISH**　　: **4:00 PM**

Instruction to candidates

1. This question paper has THREE (3) Sections.

2. Answer **ALL** questions in Section A, MCQ.

3. Answer **5** questions in Section B, MSAQ.

4. Answer **2** questions in Section C, MEQ.

5. No scripts or answer sheets are to be taken out of the Examination Hall.

6. For Section A, answer in the OMR form provided.

Do not open this question paper until instructed

(Candidates are required to give their answers in their own words as far as practicable)

Multiple Choice Questions   (30*1=30)

1. **The 8-bit encoding format used to store data in a computer is _____.**
   a. ASCII
   b. EBCDIC
   c. ANCI
   d. USCII

2. **The ALU makes use of _____ to store the intermediate results.**
   a. accumulators
   b. registers
   c. heap
   d. stack

3. **Which of following can be considered as most advanced ROM?**
   a. DRAM
   b. EEPROM
   c. RAM
   d. PROM

4. **In the CPU, what is the functionality of the control unit?**
   a. To decode program instruction
   b. To perform logic operations
   c. To store program instruction
   d. To transfer data to primary storage

5. **The first electronic computer was called:**
   a. ENIAC
   b. Apple IIe
   c. EDVAC
   d. UNIVAC

6. **The small extremely fast, RAM's are called as :**
   a. Heaps
   b. Accumulators
   c. Stacks
   d. Cache

7. **Step of computer which performs action given in instruction is called:**
   a. Fetch
   b. Execute
   c. Calculate
   d. Decode

8. **Time required between moving an instruction one step down pipeline is a:**
   a. Clock cycle
   b. Hit rate
   c. Cycle rate
   d. Processor cycle

9. **Process of reading data from permanent store and writing it to computer's main store is called:**
   a. Saving data
   b. Loading data
   c. Writing data
   d. Reading data

10. **Stack pointer is:**
    a. The first memory location where a subroutine address is stored
    b. A register in which flag bits are stored
    c. 16-bit register in the microprocessor that indicate the beginning of the stack memory
    d. A register that decodes and executes the 16-bit arithmetic expression

11. **Counter that holds addresses of next fetched instruction is called:**
    a. Sequence control register
    b. Program counter
    c. Temporary register
    d. Both A and B

12. **Each entry in a segment table has a :**
    a. Segment base
    b. Segment peak
    c. Segment value
    d. None of the above

13. **An instruction used to set the carry flag in a computer can be classified as:**
    a. Data transfer
    b. Process control
    c. Logical
    d. None of the above

14. **All writing procedures for same location are seen having same order; stated property is called:**
    a. Write serialization
    b. Read serialization
    c. Parallel processing
    d. Synchronization

15. **The segment base contains :**
    a. Starting logical address of the process
    b. Starting physical address of the segment in memory
    c. Segment length
    d. None of the above

16. **The computer cluster architecture emerged as a result of _____.**
    a. ISA
    b. workstation
    c. super computers
    d. distributed systems

17. **Collection of 8 bits is called:**
    a. Byte
    b. Word
    c. Record
    d. None of the above

18. **How much address lines are required to address each memory location in a 4096 x 4 memory chip?**
    a. 9
    b. 10
    c. 11
    d. 12

19. **The advantage of RISC processor over CISC processor is that:**
    a. The hardware architecture is simpler
    b. An instruction can be executed in one cycle
    c. Less number of registers accommodate in chip
    d. Parallel execution capabilities

20. **The interconnection between ALU & Registers is collectively known as:**
    a. Information path
    b. Data path
    c. Process route
    d. Information trail

21. **Why we need to have secondary storage?**
    a. Store large volume of data that exceed the capacity of main memory
    b. Perform arithmetic and logical operations
    c. To give power to the system too
    d. To help processor in processing

22. **The binary of the decimal number 368 is equal to_____.**
    a. 101110000
    b. 111100101
    c. 110110000
    d. 110110010

23. _____ is used to convert high-level language into a low-level language.
   a. Assembler
   b. Interpreter
   c. Compiler
   d. Both A and B

24. The octal number $(651.124)_8$ is equivalent to _____.
   a. $(1A9.2A)_{16}$
   b. $(1B0.10)_{16}$
   c. $(1A8.A3)_{16}$
   d. $(1B0.B0)_{16}$

25. An example of sequential access memory is:
   a. Floppy disk
   b. Hard disk
   c. Magnetic tape memory
   d. RAM

26. The inverter is :
   a. NOT gate
   b. OR gate
   c. AND gate
   d. None of the above

27. The output will be a LOW for any case when one or more inputs are zero in a/an:
   a. OR Gate
   b. NOT Gate
   c. AND Gate
   d. NAND Gate

28. Data hazards occur when:
   a. Greater performance loss
   b. Pipeline changes the order of read/write access to operands
   c. Some functional unit is not fully pipelined
   d. Machine size is limited

29. The instruction ADD R1, 45 :
   a. Finds the memory location 45 and adds that content to that of R1and stores it in R1
   b. Adds 45 to the value of R1 and stores it in R1
   c. Finds the memory location 45 and adds that content to that of R1
   d. None of the above

30. Private data that is used by a single-processor, then shared data are used by:
   a. Single processor
   b. Multi processor
   c. Single tasking
   d. Multi tasking

SECTION B
Short Answer Questions
Answer any five (5) questions out of eight (8) questions (5*6=30)

1. Define Computer Architecture. How Computer Architecture is characterized? (2+4)

2. Mention what are different types of interrupts in a microprocessor system. Explain.

3. Describe in details about pipelining.

4. Can a high level language use an assembler? Justify.

5. Write the meaning of parallel computing. Explain why parallel computing is preferred over serial computing. (2+4)

6. Mention what are the different types of fields that are part of an instruction.

7. Define motherboard with its parts.

8. Write short notes on (**any two**): (2*3=6)
    a. Distributed memory
    b. Bus System
    c. Tertiary Memory

1. **A.** Elaborate the term instruction set architecture in brief. Explain the various types of instruction set architecture in detail with examples. (10)
    B. Explain in detail about a cache and why is the access time of the cache memory lesser than the access time of the main memory.(10)

2. Describe the various criteria for evaluation of storage devices. Explain the magnetic storage system with example. Also explain the four basic types of storage devices with example.(6+6+8)

3. Explain the term instruction cycle with example. Draw and explain the flowchart for instruction Cycle. Differentiate the instruction on the basis of operands with examples. Evaluate the following instruction X= [(A+B)*(C+D)]/ (K+L)(G+H) with the help of one address and two address instruction. (5+5+5+5)

****BEST OF LUCK****