EXAMINATION PAPER

FACULTY	**:**	**COMPUTER SCIENCE AND MULTIMEDIA**
COURSE	**:**	**BACHELOR OF INFORMATION TECHNOLOGY (HONS)**
YEAR/ SEMESTER	**:**	**FIRST YEAR / SEMESTER ONE**
MODULE TITLE	**:**	**BASIC COMPUTER ARCHITECTURE**
CODE	**:**	**BIT 112**
DATE	**:**	**APRIL 10-2018, TUESDAY**
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

SECTION A

Multiple Choice Questions **(30*1=30)**

1. **The term 'Computer' is derived from:**
    a. Latin
    b. German
    c. French
    d. Arabic

2. **CD-ROM stands for:**
    a. Compact Data Read Only Memory
    b. Compact Disk Read Only Memory
    c. Compactable Data Read Only Memory
    d. Compact Disk Read On Memory

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

4. **Secondary storage memory is basically:**
    a. Volatile memory
    b. Non volatile memory
    c. Backup memory
    d. Impact memory

5. **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

6. **Part of computer which uses instructions and data for later use is called:**
    a. Storage
    b. Processor
    c. Delay
    d. Access time

7. **Which of the following is called low level languages?**
    a. Machine language
    b. Assembly language
    c. Both of the above
    d. None of the above

8. **The control unit controls other units by generating :**
    a. Control signals
    b. Timing signals
    c. Transfer signals
    d. Command Signals

9. **Symbol representing AND operation:**
    a. (+)
    b. (.)
    c. (-)
    d. (/)

10. **NOR function is represented by:**
    a. F=x
    b. F=(xy)'
    c. F=xy
    d. F=(x+y)'

11. **Output of OR gates in Product of Sum (POS) is connected to:**
    a. NOT gates
    b. OR gates
    c. AND gates
    d. XOR gates

12. **In a computer, expansion cards are inserted into:**
    a. Slots of CPU
    b. Peripheral devices
    c. Hard disk of CPU
    d. Back of monitor

13. To increase the speed of memory access in pipelining, we make use of:

a. Special memory locations
b. Special purpose registers
c. Cache
d. Buffers

14. An output of a combinational circuit depends upon:

a. Previous inputs
b. Present inputs
c. Both Present and previous
d. None of the above

15. A demultiplexer is a logic circuit that:

a. Accepts one input and gives several outputs
b. Accepts many inputs and gives many outputs
c. Accepts many inputs and gives one output
d. Accepts one input and gives one output

16. The decimal equivalent of hexadecimal C9 is _____.

a. 215_{10}
b. 220_{10}
c. 201_{10}
d. 210_{10}

17. The translator program used in assembly language is called _____.

a. compiler
b. interpreter
c. assembler
d. translator

18. The difference between memory and storage is that memory is _____and storage is _____.

a. temporary, permanent
b. permanent, temporary
c. slow, fast
d. all of the above

19. A compiler is a translating program, which:

a. Translates instruction of a high level language into machine language
b. Translates entire source program into machine language program
c. Is not involved in program's execution
d. All of the above

20. In a computer, ALU can perform:

a. Addition
b. Subtraction
c. Multiplication
d. All of the above

21. Component of CPU which is responsible for comparing contents of two pieces of data is:

a. ALU
b. CU
c. Memory
d. Register

22. A physical connection between the microprocessor memory and other parts of the microcomputer is known as:

a. Path
b. Address bus
c. Route
d. All of the above

23. Instruction in computer languages consists of:

a. OPCODE
b. OPERAND
c. Neither 'a' nor 'b'
d. Both 'a' & 'b'

24. 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

25. 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

26. The segment base contains the:

a. Starting logical address of the process
b. Starting physical address of the segment in memory
c. Segment length
d. None of the mentioned

27. Control unit timed sequence that fetches instructions from computer main store is classified as:

a. Fetch execute cycle
b. Timed cycle
c. Sequenced cycle
d. Execution cycle

28. 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

29. The computer cluster architecture emerged as a result of _____.

a. ISA
b. Workstation
c. Super computers
d. Distributed systems

30. In a single byte how many bits will be there?

a. 4
b. 8
c. 16
d. 32

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

1. Convert $(8592)_{10}$ to equivalent binary, octal and hexadecimal number system.

2. Define structural hazards. Explain how structural hazards can be reduced. (2+4)

3. Differentiate between SISD and MIMD.

4. Give the meaning of term data. Explain the various types of data with example. (2+4)

5. Explain the hardware implementation of logic micro-operations in details.

6. Discuss the influence of pipelining in detail.

7. Discuss Cache memory and explain why is the access time of the cache memory lesser than the access time of the main memory? (2+4)

8. Explain in detail about I/O processor.

SECTION C
Long Answer Questions
Attempt any two (2) questions out of three (3) questions (2*20=40)

1. Explain parallel computing. Give reason why parallel computing is preferred over serial computing. Describe the three different types of memory architecture with pros and cons of each. (5+5+10)

2. Define the term instruction set architecture in brief and various factors affecting ISA. Describe what is meant by Von-Neumann architecture in detail along with software and hardware design of instruction architecture. (8+12)

3. Describe the term storage device and explain the four basic types of storage devices with example. Explain pros and cons of RAM and ROM along with its classification. (4+4+6+6)

******BEST OF LUCK******