REV-00
BCA/20/25

2015/12

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**

Answer any *five* of the following questions:

1. What is program interrupt? What is the difference between internal and external interrupt? Explain software interrupt. (3+4+3=10)
2. Explain the difference between hardware control and microprogrammed control. Is it possible to have a hardwired control associated with a control memory? Explain microprogrammed control unit. (3+1+6=10)
3. What is pipeline? Explain instruction pipeline. Give the characteristics of RISC and CISC. (3+3+4=10)
4. What do you mean by assembly language? What is an assembler? Write an assembly language program to subtract two numbers. (3+2+5=10)
5. Give the basic computer instruction format. What is immediate instruction? Explain direct and indirect addressing mode with diagram. (3+2+5=10)
6. What is DMA? What do you mean by DMA burst transfer and cycle stealing? Explain DMA transfer with diagram. (2+3+5=10)
7. What is main memory? What is cache memory? Explain magnetic disk with diagram. (3+2+5=10)

8. What do you mean by computer organization and computer architecture? What is an input-output interface? What are the major differences exist between the central computer and each peripheral, which are resolved by interface? (4+2+4=10)

*****

BACHELOR OF COMPUTER APPLICATION
Third Semester
COMPUTER ORGANIZATION AND ARCHITECTURE
(BCA - 14)

Duration: 20 minutes **Marks – 20**

(PART A - Objective Type)

I. Answer the following: **1×20=20**

1. The decimal equivalent of 2^{10} is
   A. 512 B. 256 C. 1024 D. 128

2. A..... is a group of devices that store digital data.
   A. register B. object C. component D. datum

3. A gate is a logical circuit with one or more input signals but only..... output signal.
   A. one B. two C. three D. four

4. The ALU carries out arithmetic and logic operations. It processes ..... numbers rather than decimal numbers.
   A. decimal B. hexadecimal C. binary D. octal

5. What is the 2's complement of 1100 number?
   A. 1011 B. 0011 C. 1111 D. 0100

6. What is the 1's complement of 0010 1101 number?
   A. 0010 1101 B. 1101 0010
   C. 1010 1100 D. 1010 1100

7. A flip-flop can store:
   A. 1 bits of data B. 2 bits of data
   C. 3 bits of data D. 4 bits of data

8. The radix of the binary number is:
   A. 3 B. 1 C. 2 D. 10

9. Which of the following registers is loaded with the contents of the memory location pointed by the PC?
   A. Memory Address Register B. Memory Data Register
   C. Instruction Register D. Program Counter

10. Which of the following registers is used to keep track of address of the memory location where the next instruction is located?
   A. Memory Address Register B. Memory Data Register
   C. Instruction Register D. Program Counter

11. Which is the computer memory that does not forget?
   A. ROM B. RAM
   C. PROM D. All of the above

12. Which of the following is an example of non-volatile memory?
   A. RAM B. VLSI C. LSI D. ROM

13. Which of the following memories must be refreshed many times per second?
   A. Static RAM B. Dynamic RAM
   C. EPROM D. ROM

14. 1 byte is equal to
   A. 16 bits B. 4 bits C. 8 bits D. 32 bits

15. Conversion of binary number 11001_2 to its decimal number is
   A. 27_{10} B. 39_{10} C. 50_{10} D. 25_{10}

16. ..... is a technique of decomposing a sequential process into suboperations, with each subprocess being executed in a special dedicated segment that operates concurrently with all other segments.

17. A software interrupt is initiated by executing an instruction.
   A. True B. False

18. RISC stands for
   A. Reduction Instruction Set Computer.
   B. Raising Instruction Set Computer.
   C. Reduced Interface Set Computer.
   D. Reduced Instruction Set Computer.

19. A computer that employs a microprogrammed control unit will have
   A. a main memory B. a control memory
   C. A and B D. none of the above

20. In Direct memory access (DMA), CPU is used as an intermediate path.
   A. True B. False

*****