Exam.Code:0003
Sub. Code: 0291

2121
B.A./B.Sc. (General) Third Semester
Computer Science
CS05: Computer Organization

Time allowed: 3 Hours | Max. Marks: 30

NOTE: *Attempt five questions in all, including Question No. 9 (Section - E) which is compulsory and selecting one question each from Section A- D.*

x-x-x

Section - A

1. *a)* Add -42 and -28 using 8-bit 2's complement signed arithmetic.

   b) What do you mean by Hamming code? Describe its working and usage.

(2×3=6)

2. a) Verify that the following Boolean expressions are true or false:

   $P.(P + Q) = P$
   $P.(\sim P + Q) = P.Q$

   b) Convert the following:

   $(5467)_8 = (\ ?\ )_2$

   $(10100011)_2 = (\ ?\ )_{10}$

(2×3=6)

Section - B

3. What do you mean by the interrupts? Describe various types of hardware interrupts with example.

(1×6=6)

4. What is counter? Which type of counter gives ripple effect? Describe the working of 2-bit asynchronous counter.

(1×6=6)

P.T.O.

Section - C

5. Write a short note on the following:
   a) Immediate addressing mode
   b) Direct addressing mode
   c) General purpose registers

(3×2=6)

6. Differentiate between machine and assembly languages.

(1×6=6)

Section - D

7. Describe various components of a computer system with suitable diagram.

(1×6=6)

8. What do you mean a peripheral device? Name at-least 4 peripheral devices and discuss any two.

(1×6=6)

Section – E

9. Describe the following:

   a) De Morgan's first law *b)* Instruction Cycle *c)* Flip-flop
   d) Instruction set of 8086

(4×1.5=6)

x-x-x