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BMS College of Engineering, Bengaluru-560019

(Autonomous Institute, Affiliated to VTU, Belgaum)

January 2016 Semester End Make Up Examinations

Course: Computer Organization And Embedded Systems **Duration: 3 Hours**

Course Code: 15IS3DCCOE **Max Marks: 100**

Date: 19.01.2016

Instruction: Answer any five full questions choosing one from each unit.

UNIT-I

1. a) List the steps needed to execute the following machine instructions with a neat diagram . **10**
   i) Load R2, loc
   ii) Add R4,R2,R3
   b) Write a program to perform addition of n numbers using indirect addressing mode. **04**
   c) Define subroutine nesting and explain parameter passing through registers with an example. **06**

UNIT-II

2. a) Explain conditional and unconditional branching instructions with an exam. **06**
   b) Explain with a diagram processor-memory interface and IR control Signals. **06**
   c) Differentiate between micro programmed and hardware control approach and explain Hardwired control approach with an neat diagram. **08**

UNIT-III

3. a) Write a program that reads a line of characters and displays it using CISC-Style approach. **10**
   b) Define interrupts and explain the different ways of handling multiple device interrupt request. **10**

OR

4. a) Explain the basic structure of memory hierarchy. **06**
   b) Discuss how the read and write operations of memory are carried out in cache memory. **06**
   c) With a neat diagram, explain the address translation mechanism in virtual memory. **08**

UNIT-IV

5.	a)	Explain the 4-bit carry-lookahead adder along with neat diagram in detail.	**08**
	b)	Assuming 6-bit 2's complement number representation, multiply the multiplicand A=110101 by the multiplier Q= 011011 using both the normal Booth Algorithm and bit pair recording booth algorithm.	**06**
	c)	Perform the operation of division using a restoring method on the following pairs of numbers. X is the divisor and Y is the dividend. X= 0101, Y=11111	**06**

UNIT-V

6.	a)	With a block diagram, explain the working principles of an digital camera.	**06**
	b)	Explain parallel I/O interface of a simple microcontroller.	**08**
	c)	Describe actuators with an example.	**06**

OR

7.	a)	Explain the block diagram of a micro controller in detail.	**10**
	b)	Explain the different types of sensors.	**10**

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