**Internal Assessment Question Paper – 2**

**M.S. Ramaiah Institute of Technology**

**(Autonomous Institute, Affiliated to VTU)**

**Department of CSE**

**Programme :** B.E **Term:** Jan- May 2016 **Date:** 4-4-2016

**Course:** Computer Organization **Course Code:** CS1541  **CIE:** Test 2

**Sem:** IV **Sec:** A, B & C **Max Marks:** 30 **Time:** 9:30–10:30 am

**Portions for Test:** (L12-L32)

**Instructions to Candidates:** Mobiles, smart watches or any electronic gadgets are strictly banned.

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| **Sl#** | **Question** | **Marks** | **Bloom’s Level** | **CO Mapping** |
| **1** | 1. Compute i) 68 \* -45 ii) -25 \* -12 using Bit-pair recoding technique. | 5 | Apply | CO2 |
| 1. With a neat diagram explain the datapath for branch instruction. | 5 | Understand | CO3 |
| 1. Identify the hazards in the following instruction sequence, if any and resolve using forwarding technique.   ADD $t1,$t2, $t3  SUB $t4, $t1, $t4  AND $t6, $t1, $t7  OR $t8, $t1, $t9 | 5 | Analyze | CO3 |
| **2** | 1. Compute 52 \* 26 using Carry Save Addition (CSA) technique. | 5 | Apply | CO2 |
| 1. Describe an abstract view of implementation of MIPS subset with a neat diagram. | 5 | Understand | CO3 |
| 1. Briefly explain branch prediction method to resolve control hazard with suitable examples. | 5 | Understand | CO3 |
|  | **OR** |  |  |  |
| **3** | 1. Represent the following numbers using single precision IEEE 754 format 2. 12.125 ii) -642.1875 | 5 | Apply | CO2 |
| 1. Define the following terms 2. Combinational element ii) State element iii) Clocking methodology   iv) Datapath element v) Structural hazard | 5 | Remember | CO3 |
| 1. Draw the pipelined datapath for Instruction decode and Memory access stages for load instruction. | 5 | Understand | CO3 |

**Course Outcomes meant to be assessed by the IA Test-II:**

**CO2:** Implement different algorithms used to perform fast multiplication and division also represent the floating-point number in IEEE format.

**CO3:** Design a datapath for MIPS architecture and understand the importance of pipelining.

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