Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14CS3003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **Advanced Computer Architecture** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | State Amdahl’s law and how will you measure the overall performance of CPU using Amdahl’s law? | CO2 | 20 |
| (OR) | | | | |
| 2. |  | Discuss the different types of addressing modes with neat sketch. | CO2 | 20 |
| 3. |  | What is structural hazard? Explain the technique to avoid structural hazard in a 5 stage pipeline. | CO3 | 20 |
| (OR) | | | | |
| 4. |  | What is data hazard? Explain the technique to avoid data hazard in a 5 stage pipeline. | CO3 | 20 |
| 5. |  | Compare and contrast SISD , SIMD, MISD and MIMD. | CO1 | 20 |
| (OR) | | | | |
| 6. |  | Compare UMA, NUMA and COMA with a neat sketch. | CO1 | 20 |
| 7. |  | Explain the concept of dynamic scheduling in Tomasulo’s approach with a neat  diagram. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Discuss the role of reservation station duties in Tomasulo’s approach for the following instruction   |  |  |  |  | | --- | --- | --- | --- | | Instruction | | j | k | | LD | F6 | 34+ | R2 | | LD | F2 | 45+ | R3 | | MULTD | F0 | F2 | F4 | | SUBD | F8 | F6 | F2 | | DIVD | F10 | F0 | F6 | | ADDD | F6 | F8 | F2 | | CO1 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Describe the memory hierarchy with neat sketch. | CO1 | 10 |
|  | b. | Compare and contrast set associative mapping and associative mapping. | CO1 | 10 |

ALL THE BEST