

Code No: 155AK**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, September - 2021****COMPUTER ARCHITECTURE****(Electrical and Electronics Engineering)****Time: 3 Hours****Max. Marks: 75**

Answer any five questions
All questions carry equal marks

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- 1.a) With neat sketch explain the design of control unit of basic computer.
- b) Multiplicand B=10111, Multiplier A= 10011. Explain the hardware implementation and algorithm for multiply operation. [7+8]
- 2.a) Explain addition and subtraction algorithms for data represented in signed magnitude and signed 2's compliment.
- b) Convert the $(256)_{10}$ into Binary Coded Decimal (BCD). [7+8]
- 3.a) Discuss about stack organization of memory.
- b) Write a short note on Cache memory. [7+8]
- 4.a) Briefly explain about Direct Memory Access.
- b) Differentiate Isolated I/O and memory mapped I/O. [7+8]
- 5.a) Briefly explain about Real mode addressing.
- b) Write a short note on IA = 64. [8+7]
- 6.a) Explain about addressing modes of 80×86.
- b) Write a short note on segmentation. [8+7]
- 7.a) Derive speedup achieved by a pipeline unit over a non-pipeline unit.
- b) Describe the data and control path techniques in pipelining. [8+7]
- 8.a) Describe the MIPS Architecture.
- b) What are the differences between ARM and MIPS? [7+8]

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