

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER B.TECH DEGREE EXAMINATION(R&S) MAY 2019

Course Code: EC206

Course Name: COMPUTER ORGANISATION (EC)

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks

Marks

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|---|---|-----|
| 1 | a) Explain Propagate adder and ripple carry adder. | (8) |
| | b) Illustrate the use of shifters and rotators with example in arithmetic circuits. | (7) |
| 2 | a) Define the following terms of MIPS processor: | (8) |
| | (i) Register Set. (ii) Operands. (iii) Memory. (iv) Registers. | |
| | b) With example explain briefly R-type and I-type Instruction format in Machine Language. | (7) |
| 3 | a) Define fixed point number systems with examples. | (7) |
| | b) Convert to MIPS assembly instruction (i) 0x2128FF6A | (8) |
| | (ii) 0x0253882A | |

PART B

Answer any two full questions, each carries 15 marks

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|---|--|-----|
| 4 | a) Explain Pseudoinstructions and exceptions in MIPS. | (8) |
| | b) Explain Floating Point instructions used in MIPS | (7) |
| 5 | a) Briefly define the state elements used in MIPS processor. | (7) |
| | b) Explain the data path of single cycle R-type instruction. | (8) |
| 6 | a) With neat diagram explain multi cycle control for R-type instruction. | (8) |
| | b) Explain signed and unsigned instructions used in MIPS | (7) |

PART C

Answer any two full questions, each carries 20 marks

- 7 a) Illustrate the different modes of data transfer in I/O systems. (5)
b) Mention the working of memory cells SRAM and DRAM. (10)
c) Draw Memory Hierarchy diagram. (5)
- 8 a) Explain Address Translation in virtual Memory. (8)
b) With neat diagram explain briefly TLB. (7)
c) Define Write through and Write Back Policies. (5)
- 9 a) Illustrate the different mapping methods of Cache Memory. (8)
b) Write short notes on Segmentation and paging. (7)
c) Sketch the internal organization of a memory chip. (5)
