

POKHARA UNIVERSITY

Level: Bachelor

Semester – Spring

Year: 2020

Program: BE

Full Marks: 70

Course: Computer Architecture

Pass Marks: 31.5

Time: 2 hrs.

Candidates are required to answer in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

Section - A: (5×10=50)

- Q. N. 1 As a computer engineering student you are studying the subject computer architecture, but the same course is being taught to electronics and communication engineering students as computer organization, so how do you differentiate between computer architecture and computer organization, give reasons with some examples to support your answer.

OR

Differentiate between Computer Architecture and Computer Organization. What are the instructions set design issues of CPU?

- Q. N. 2 In an Arithmetic and Logic Unit (ALU), there are common input/output lines for both logical and arithmetic values so how the unit does performs both logical and arithmetic calculations.
- Q. N. 3 What is Register Renaming? Explain the roles of overlapped register window in RISC processor.
- Q. N. 4 Differentiate between Hardwired and Micro programmed Control Unit. Describe the drawbacks of Programmed I/O and Interrupt Driven I/O and explain how DMA overcomes their drawbacks.
- Q. N. 5 It is said that cache memory helps to improve the performance of computer system, in real world computer system; we see that the cache memory is of small size only, with different levels. Can we use a single big cache memory instead of using small cache memory with different levels? Give reasons based on how cache memory works.

Section - B: (2×10=20)

- Q. N. 6 a) How can you say that “using pipelining improves the overall system performance with single processor” give example to support your answer?
- b) What is floating point arithmetic? Perform the following signed multiplication: $(16)_{10} * (-9)_{10}$