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Register for Certification exam

Thank you for taking the Week 8 : Assignment 8.

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8 : Assignment 8

Your last recorded submission was on 2021-09-21, 18:37 IST   Due date: 2021-09-22, 23:59 IST.

1) Which of the following fractions can be represented exactly in binary?   *1 point*

    a. 0.75
    b. 0.50
    c. 0.33
    d. 0.66
    e. 0.99
    f. 0.25

☑ a.
☑ b.
☐ c.
☐ d.
☐ e.
☑ f.

2) For any binary number shifting the fraction point left by 2 position is equivalent to?   *1 point*

    a. Dividing value by 4
    b. Multiplying value by 4
    c. Adding 2
    d. Subtracting 2
    e. None of these.

⦿ a.
○ b.
○ c.
○ d.
○ e.

3) For a single precision floating point number representation in IEEE-754 format, how many bits are used to represent mantissa?   *1 point*

    a. 23
    b. 24
    c. 8
    d. 127
    e. None of these

⦿ a.
○ b.
○ c.
○ d.
○ e.

4) Consider a floating point representation with 39-bit mantissa (including the implied bit), the number of significant digit in decimal will be_____

11

1 point

5) The interpretation of the single precision floating point number 1000 0000 0001 1111 0000 0000 0000 1111 represented in IEEE-754 format will be:

1 point

    a. 0
    b. Very close to 0
    c. Not a number
    d. Infinity

- a.
- ● b.
- c.
- d.

6) Consider the following statements:

1 point

(i) IEEE-754 floating point representation requires shifting of mantissa for multiplication and division operation.
(ii) Shifting of mantissa affects exponent value of the number.

Which of the following statement is correct?

    a. Only (i) is true
    b. Only (ii) is true
    c. Both (i) and (ii) are true
    d. Both (i) and (ii) are false.

- a.
- ● b.
- c.
- d.

7) What is required if we shift the mantissa left by 3 positions to normalize a number represented in IEEE754 format?

    a. We have to decrement Exponent by 3
    b. We have to increment Exponent by 3
    c. We have to decrement Exponent by 2^3
    d. We have to increment Exponent by 2^3

- ⦿ a.
- ○ b.
- ○ c.
- ○ d.

8) Consider a 6-stage pipeline with stage delays of 45, 20, 15, 42, 23 and 20 nanoseconds respectively. Ignoring the delay of the latches between stages, the total time required to process 1500 sets of data in the pipeline will be .... microseconds. (Provide your answer up-to two decimal places)

67.72

Consider the following reservation table:

	1	2	3	4	5	6	7	8
S_1	X				X			X
S_2		X				X		X
S_3			X			X		

In the reservation table multiple X in a row represents:

a. Repeated use of the same stage in different cycles

b. Extended use of a stage for more than one cycle

c. Parallel use of stage in same cycle

d. None of these.

○ a.
○ b.
○ c.
○ d.

10) For the following reservation table of an 8-stage pipeline, what will be the minimum average latency?

	1	2	3	4	5	6	7	8
S_1	X				X			X
S_2		X				X		X
S_3			X			X		

a. 5.0 clock cycles
b. 4.5 clock cycles
c. 8.0 clock cycles
d. 1.0 clock cycles

- a.
- ● b.
- c.
- d.

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers

Note: All these answers are confirmed from our side, we don't guarantee that you will get a 100% score. These are our own answers that we are sharing with you all. If you have any doubt that our answers are not correct then feel free to discuss (in-group) or do your own answer.

Most important: We don't promote any type of cheating, these answers are only for those students who are not able to do it on their own or need some help.