Week 4: Assignment 4

The due date for submitting this assignment has passed.

Due on 2021-09-01, 23:59 IST.

As per our records you have not submitted this assignment.

Consider the Sequence Graph shown in the figure below. Each MUL (performs multiplication operation) and ALU (performs rest operations) operation takes one unit of time (i.e., single cycle). The latency bound $\lambda = 5$. Please note that the dummy operations 0 and n do not take any time step. Operations 1 to 11 will be scheduled during time steps 1 to 5. Answer the following questions from 1 to 9 for minimizing resources under latency constrained (MRLC) Force-Directed scheduling.

```
FDS( G(V, E), λ ) {
    repeat {
        Compute the time-frames;
        Compute the operation and type probabilities;
        Compute the self-forces, predecessor/successor forces and total forces;
        Schedule the operation with least force and update its time-frame;
    }
    until (all operations are scheduled);
    return (t);
}
```

1) What is the ASAP and ALAP times of operation 6? *1 point*

- 1, 3
- 3, 1
- 1, 2
- 2, 1

No, the answer is incorrect.
Score: 0
Accepted Answers:
1, 3

2) What is the mobility of operation 8? *1 point*

- 4
- 3
- 2
- 1

No, the answer is incorrect.
Score: 0
Accepted Answers:
3

3) Select the correct ALAP time of operations 3 and 11? *1 point*

- 2, 2
- 3, 2
- 2, 5
- 3, 5

No, the answer is incorrect.
Score: 0
Accepted Answers:
3, 5

4) How many number of MUL and ALU required for this MRLC Schedule *1 point*

- 2, 2
- 1, 1
- 2, 1
- 3, 1

No, the answer is incorrect.
Score: 0
Accepted Answers:
2, 1

5) What is the time frame of operation 10? *1 point*

- [1, 3]
- [1, 4]
- [1, 5]
- [2, 5]

No, the answer is incorrect.
Score: 0
Accepted Answers:
[1, 4]

6) The probability of operations 1 and 10 at time step 1 are *1 point*

- 0.5, 0.25
- 0.33, 0.25
- 1, 0.33
- 0.5, 0.33

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.5, 0.25

7) The value of the MUL resource type distribution at time step 1 is *1 point*

- 1.83
- 0.25
- 1.58
- 2.83

No, the answer is incorrect.
Score: 0
Accepted Answers:
1.58

8) When operation 2 is assigned to time step 1, what is the self-force for operation 2: *1 point*

- 0.415
- 0.25
- -0.25
- -0.415

No, the answer is incorrect.
Score: 0
Accepted Answers:
-0.415

9) The assignment of operation 2 to time step 2 implies that the assignment of operation 3 to time step 3. Therefore, the force of operation 3 related to time step 3 is: *1 point*

- 0.415
- 0.25
- -0.25
- -0.415

No, the answer is incorrect.
Score: 0
Accepted Answers:
-0.25

10) Consider the following code. How many longest paths are there in the behavior? *1 point*

```
for(_ _)
{
    1. ppc = pc
    2. popc = oldpc
    3. pbus = ibus + 4
    4. if(branch==1)
    5. pc = branchpc;
    6. endif
    7. while(ireI=1) ; //Busy Wait//
    8. oldpc = pc
    9. pc = pc + 4
    10. Endop
}
```

- 2
- 3
- 4
- 5

No, the answer is incorrect.
Score: 0
Accepted Answers:
3