

Home Assignment (08/10/2020)

Group A

1. (B) Write update protocol
2. (c) the priority i output line (i.e priority $i+1$ input line) is passive
3. (c) activates its output grant line, enabling the next master to use the bus
4. (a) the bus request line is common
5. (a) switching network
6. (b) shared
7. (b) distributed memory systems
8. (a) shared memory systems
9. (b) cycle - 12
10. (d) cycle - 15
11. (c) cycle - 21
12. (d) Common data bus
13. (b) a record of the fundamental unit that will generate the operand(s) is kept in the reservation station.
14. (c) ~~DD~~ DADDUI and BNE
15. (a) scheduling
16. (b) cycle - 15
17. (b) cycle - 6
18. (d) all of the above
19. (d) 1.56
20. (b) WAR

(21.)

Line .	Instruction	Description
1	S1 S2+S3	Add S2 and S3 and store the result in S1
2	S1 S2+S3	Add S2 and S3 and store the result in S1
3	S2 S1+S7	Add S1 and S7 and store the result in S2
4	S1 S4+S5	Add S4 and S5 and store the result in S1

As shown in the Gantt Chart, the sequence of instructions take 11 clock cycles to execute. The second instruction cannot issue until first instruction completes because S1 has already been reserved by first instruction. Similarly instruction 3 cannot issue until instruction 2 completes because S1 has been reserved.

However, instruction 4 can issue on the clock cycle after instruction 3 issues because S1 is not reserved by instruction 3.

Instruction	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	E	E	E									
2				1	E	E	E						
3							1	E	E	E			
4								1	E	E	E		
	1	2	3	4	5	6	7	8	9	10	11		