ECE 464 / ECE 520/ DS 510P

Final 2002

Solutions

Question	A	B	C	D	E
1	•				
2					•
3				•	
4		•			
5					•
6		•			
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9	•				
10			•		
11			•		
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20			•		
21		•			
22		•			

1. **A;** a "gift" question.
2. **E;** writing D twice in a blocking procedural block is fine.
3. **D;** the "else" is missing. Gift again.
4. **B;** FPGAs are slower, bigger, cost more in production, and the code writing effort is much the same.
5. **E;** B is way bigger than any practical chip will ever be with CMOS.
6. **B;** another (almost) gift.
7. **B;** a deliberate non-blocking targeted design.
8. **C;** You have to stop the * inputs from changing to save power.
9. **A;** If you disagree, review my example.
10. **C;** easy one.
11. **C;** This satisfies the equalityin ">=". Even if you thought it as ">", clock times are real numbers, not just integers. The closest integer was still C.
12. **B;** see 11.
13. **D;** gift
14. **C;** code coverage can never cover all unique execution paths

15. A; gift
16. D; easy one
17. B; D comes close but "interactions" covers a lot more of the design than just the bits at the interface. Tough one.
18. A; Easy one.
19. C; battery life is maximized by min. energy per op, not power. (E=P*t)
20. C; gift
21. B; Again, assigning 2x with blocking statements is fine. It is the last assignment that "matter". In any case, 2 FFs however you treat the code.
22. B; RTFM