RBS Questions

1. You have two threads, one is printing odd numbers and one is printing even number continuously. Manage them in such a way that they print numbers in sequence. (If you going to answer it through seamaphore than they will ask you to implement it through wait notify).
2. We have a three cross three matrix, write a code such that only one thread can write at one position in matrix, but another thread can write on another thread in that matrix.
3. You have two arrays one of length “n” and another of “n-1” having same numbers find the missing number. After giving its optimal solution they will change (n-1) to (n-2) and ask for optimal solution for same. After providing answer using a “Set” they will say that it may contain duplicate.
4. Traverse the Singly Linked List. Answer – Using Stack. After this they will ask for without using Stack.
5. Implement a LRU Cache in java. Answer – Using LinkedHashMap. After this they will ask you to implement your own.
6. Water – Jug puzzle.
7. Basic Concepts of Oops & implement them in a program.
8. Association and Composition difference and their implementation in program.
9. Which one is better between Inheritance, Composition and Association and case where you can only use Inheritance.
10. New features in JAVA 6,7 & 8
11. What is open – closed principle?
12. Design Patterns you have worked on – than they will ask you questions from same.
13. Your previous project architecture.
14. Difference between CyclicBarrier and CountdownLatch (except the difference that CyclicBarrier can be reused). They will ask for the scenario in which you will apply seamaphore, CyclicBarrier & CountdownLatch.
15. HashMap – Implementation, Serialization in case of HashMap, as all fields and Entity class in HashMap are transient, so how does it work and why these fields are marked as transient.
16. Equals and Hashcode – General Contract of both and then if an object is going to be used as a key in HashMap than what all things you need to do to make it as a good key (they will ask for three things “equals()”, “hashcode()” & “immutability”.
17. What if the generated hashcode is not lying in range of buckets or integer value (i.e how u will check the range of generated hashCode())
18. Locks – ReentraantLock & ReentrantReadWriteLock
    1. how they work
    2. Difference between synchronized and Locks
    3. Are synchronized blocks reentrant? If yes then how and if no then how we can make them.
19. Immutability –
    1. What is immutable & mutable.
    2. How to make a class immutable. (Try Explaining all the necessary conditions on immutability (Clonning – Shallow and Deep both and when and where required))
    3. Why to make classes Immutable (benefits & example of class from JAVA)
20. ConcurrentHashMap (CHM) –
    1. Difference between HashMap, HashTable and CHM
    2. Working of CHM.
    3. Locking used in CHM
    4. Does read operation take lock in CHM
    5. How multiple write works in CHM(Concept of CHM)
    6. Use of UnSafe Class in CHM
    7. Is there any possibility that a CHM may give you intermediate data while parallel read and write operation?
    8. Is CHM throws ConcurrentModificationException? If yes – then how and if no implement a scenario so that it can throw the same.
21. Dependency Injection in Spring. How does Spring differ from Struts(Asked to me, as I had an exp in struts). How dependency injection works in Struts?
22. Bean Inheritance
23. One singleton bean uses another prototype bean and if singleton bean is requested again and again, then how many objects of both will be created.