Q&A Responses

1. What is kernel in os?

The kernel is the core part of an operating system, managing system resources, hardware communication, and process execution.

2. A car travels 60 mph From A to B and travels back at 40 mph from B to A. Takes one hour break.

Let d be the distance. $d/60 + d/40 + 1 = 10$. Solving for d, $d = 240$ miles.

3. Error handling in which Osi Layer

It occurs in the Transport Layer.

4. Error correction and detection in which osi layer

Data Link Layer and Transport Layer.

5. What is Delegate

A type that represents references to methods with a specific parameter list and return type, used in event handling and callback methods.

6. Inheritance vs composition

Inheritance: Represents an 'is-a' relationship, where a class derives from another class.

Composition: Represents a 'has-a' relationship, where a class contains instances of other classes.

7. 192.168.2.100 is the ip. Subnet mask is 255.255.255.192. What is the network address

192.168.2.64.

8. In multiprocessor system what scheduling algo to use for most efficiency of time i) Priority Sche

Parallel Scheduling for most efficiency.

9. 1 to many relationship in which design pattern

Observer Pattern.

10. Http status code 429

Too Many Requests.

11. What sorting algorithm is used in linked list

Merge Sort.

12. What does the decorator pattern do?

Adds behavior to individual objects, dynamically and transparently.

13. Second law of thermodynamics

The total entropy of an isolated system can never decrease over time.

14. What does Super keyword do?

Refers to the superclass (parent class) and is used to call the superclass's methods and

constructors.

15. Fun f(int n){If n>=3 return n Return f(n+1)+f(n+2);} Output for f(0)=?

The function leads to infinite recursion, which typically causes a stack overflow.

16. Next value of series: 0.28, 0.56, 1.68=?

6.72 (by a factor of 2, then by a factor of 3).

17. Difference between REST API and SOAP

REST: Lightweight, stateless, uses JSON or XML, designed for web services.

SOAP: Protocol, more heavyweight, uses XML, designed for more complex services.

18. Difference between MVP and MVVP

MVP: Model-View-Presenter, View is passive.

MVVM: Model-View-ViewModel, ViewModel handles the logic.

19. Which design pattern notifies all of its children?

Observer Pattern.

20. Http status code 429

Too Many Requests.

21. Rate limiting in REST API?

Controls the number of requests a user can make to prevent abuse.

22. Primary purpose of OPTIONS in http?

Used to describe the communication options for the target resource.

23. Which year is called the Depression Period?

1929, starting the Great Depression.

24. Difference between abstraction and inheritance

Abstraction: Hides implementation details, focusing on what an object does.

Inheritance: Mechanism to derive new classes from existing ones.

25. You have 2 jars with a capacity of 8 liters and 5 liters. You have infinity supply of water. In how

5 steps (Fill 5L, pour into 8L; repeat).

26. In a B+ tree child pointer takes 6 bytes, search field is 14 bytes , block size 512 bytes. What is th

floor((512 - 6) / 14).

27. Which OOP concept , to inherit from multiple superclasses? i) Polymorphism ii)Inheritance iii)

Multiple inheritance.

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28. From a stack of 52 cards, select any 2 cards, what is the probability of selecting one Red king/q

2/52 * 50/51 + 50/52 * 2/51 = 4/1326 ? 0.003.

29. How many Strongly connected components in this graph?

Depends on the graph structure.

30. Difference between primary key and unique key

Primary key: Uniquely identifies each record, can't be NULL.

Unique key: Ensures all values are unique, can be NULL.

31. If there's a parameterized constructor of class book with author and publisher. If you pass only

Compile time error if no default value is set for the publisher.

32. In a website you need to click few times to go back page and press once to navigate to the next

Two stack.

33. Primary purpose of memoization?

Optimization technique to store the results of expensive function calls.

34. Which is false about min heap?

The parent is always smaller than the children.

35. You can use one coin to climb 1 or 2 stairs at a time. U can start from 0 or 1. What algorithm is b

Dynamic Programming.

36. Why do we use collision resolution in hashing?

To handle cases where two keys hash to the same index.

37. What does Strategy design pattern do?

Defines a family of algorithms and makes them interchangeable.

38. What is the purpose of subnet masking?

Separates the network address from the host address.

39. Why use caching in RESTful API?

To improve performance by storing frequently accessed data.

40. Delete a huge data from a large database, without effecting the database.. (thik moto mone nai)

Use partitioning or batch processing.