Analytics

**Q** Which distribution is usually used as a prior for the distributions involving a parameter related to the average rate of occurrence of a certain event?

**A** Gamma distribution

**B** Beta distribution

**C** Normal distribution

**D** Poisson distribution

**Q** The median and mode of the numbers 15, 11, 9, 5, 15, 13, 17 are respectively:

**A** 13, 6

**B** 13, 15

**C** 15, 16

**D** 13, 18

**Q** Which of the following distributions are used for discrete Random Variables?

**A** Poisson Distribution

**B** Uniform Distribution

**C** Gaussian Distribution

**D** Gamma Distribution

**Q** Why is it important to remove unimportant or less important features from the data? Answer Choices

**A** For improved efficiency for prediction of the target variable

**B** For faster model training

**C** For standardization of the data

**D** For finding accurate clusters

**Q** Suppose we have 15 students, out of which 10 are female and 5 are male. We define the following events:

1. Event A: Selecting a female student for a cultural event;
2. Event B: Selecting a male student for a cultural event. What is the probability of selecting a female and a male student together?

**A** 15/21

**B** 2/9

**C** 5/21

**D** 1/50

**Q** Using Inter-quartile Range (IQR) method, which of the following points can be considered as outliers? 5, 6, 10, 11, 15, 17, 20, 24, 47

**A** 6

**B** 5

**C** 10

**D** 47

**Q** Match the following from List A with List B items.

|  |  |
| --- | --- |
| **List A** | **List B** |
| a. Bayes' Theorem | I. Two events cannot occur at the same time and they are also exhaustive. |
| b. Theorem of Addition | II. Probability that the event will occur given the knowledge that another event has already occurred. |
| c. Conditional probability | III. Probability of an event based on the prior knowledge of the conditions that might be related to the event. |
| d. Theorem of Complementary | IV. Happening of at least one of the events from the events |

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**A** a-III, b-IV, c-I, d-II

**B** a-I, b-II, c-III, d-IV

**C** a-III, b-IV, c-II, d-I

**D** a-II, b-III, c-IV, d-I

**Q** Which of the following are true?

**A** Independent variable = Features

**B** Dependent variable = Features

**C** Independent variable = Target

**D** Independent variable = labels

**Q** Suppose we have 15 students, out of which 10 are female and 5 are male. We define the following events:

1. Event A: Selecting a female student for a cultural event;
2. Event B: Selecting a male student for a cultural event. What is the probability of selecting a female student if we have already selected a male student?

**A** 5/7

**B** 14/21

**C** 3/7

**D** 5/21

**Q** Sampling based on probabilities is also called as:

**A** Systematic Sampling

**B** Multivariate Analysis

**C** Random Sampling

**D** Univariate Analysis

**Q**  Which among following is the most common illustration of a situation for which the main parameter of interest is a population proportion?

**A** A binomial experiment

**B** A random experiment

**C** A normal experiment

**D** An observational study

**Q**  Which of the following models are considered as gold standard for data analysis?

**A** Inferential

**B** Descriptive Analysis

**C** Quantitative Analysis

**D** Causal analysis

**Q**  If the expectation of X is E(X) = 10 and the expectation of Y is E(Y) = -2, then E(X-Y) =?

**A** 12

**B** 8

**C** Cannot be determined

**D** -12

**Q** The Box-Cox method checks whether the \_\_\_\_\_\_\_\_\_ is the smallest or not.

**A** Covariance

**B** Mean

**C** Standard Deviation

**D** Correlation

**Q** Monte Carlo methods are used to \_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_ distribution?

**A** Randomize, Posterior

**B** Randomize, Likelihood

**C** Sample, Posterior

**D** Sample, Likelihood

**Q** In Hypothesis Testing, what does 1−α corresponds to?

**A** Probability of accepting H0 when H1 is true

**B** Probability of rejecting H0 when H1 is true

**C** Probability of accepting H0 when H0 is true

**D** Probability of rejecting H0 when H0 is true

**Q**  In a bag there are 5 orange, 15 pink and 25 red balls. If a ball is drawn randomly from the bag, what is the probability that it is neither pink nor red?

**A** 2/7

**B** 51/43

**C** 5/9

**D** 12/13

**Q** For a well-posed learning problem, it should be have following traits:

**A** Refined Data, Learning Model, Evaluators

**B** Raw Data, Analytical framework, Outcomes

**C** Data, Model, Results

**D** Task, Performance measure, Experience

**Q** Out of the following, what is the major disadvantage of using trees as a set of rules?

**A** Trees are robust to outliers

**B** Trees are complex models

**C** Trees are prone to be overfit

**D** Factor Analysis

**Q**  \_\_\_\_\_\_\_\_\_\_ is then the weighted average of the values of the different possible outcomes, where the weight given to each value is its probability of occurrence.

**A** Joint Probability

**B** Weighted mean

**C** Expected value

**D** Weighted average

**Q**  Assume a random variable having exponential distribution with λ=1. What is the probability for P(X=4)?

**A** e−3

**B** e−4

**C** e−1

**D** e4

**Q** A large positive z-score, for example, 3, implies that the value under consideration is \_\_\_\_\_\_ to be included in the data, and the corresponding p-value would be \_\_\_\_\_\_\_.

**A** Highly likely, small

**B** Less likely, small

**C** Highly likely, large

**D** Less likely, large

**Q** The average growth of a specific type of tree is 5.3 inches in a year. A researcher hypothesizes that a new variety of that tree should have greater yearly growth. A random sample of 100 new trees results in average yearly growth of 5.9 inches and a standard deviation of 1.5 inches. The appropriate null and alternative hypotheses to test the hypothesis are:

**A** H0: μ=5.9 against H1: μ=5.9

**B** H0: μ=5.3 against H1: μ<5.3

**C** H0: μ=5.9 against H1: μ>5.9

**D** H0: μ=5.3 against H1: μ>5.3

**Q** Which of the following is an example of an unsupervised learning problem?

**A** Emotion Analysis

**B** Email Spam Filtering

**C** Product Recommendation Systems

**D** Stock market prediction

**Q** Which of the following can not contribute in sustaining competitive advantage with data science?

**A** Superior Scientists

**B** Unique Intellectual Property

**C** Unique Intangible Collateral Assets

**D** Historical Disadvantage

**Q** Which of the following is not an assumption for Central Limit Theorem?

**A** Samples should be related to each other.

**B** Samples should be unrelated to each other.

**C** Data needs to be sampled at random.

**D** When taking samples without replacement, a sample size should not exceed 10% of the population.

**Q** What is true about Statistics?

**A** Statistics is used to process simple problems in the real world

**B** Statistics is used to process simple problems in the virtual world

**C** Statistics is used to process complex problems in the virtual world

**D** Statistics is used to process complex problems in the real world

**Q** When we show all possible values of a discrete random variable along with their matching probabilities, then it is called as:

**A** Cumulative Distribution Function (CDF)

**B** Probability Density Function (PDF)

**C** Probability Mass Function (PMF)

**D** Cumulative Mass Function (CMF)

**Q**  Sample is regarded as a subset of?

**A** Set

**B** Distribution

**C** Data

**D** Population

**Q**  Maximum Likelihood Estimation (MLE) is used for \_\_\_\_\_\_\_\_\_ whereas Maximum a Posteriori (MAP) estimation is used for \_\_\_\_\_\_\_\_\_\_ inference?

**A** Frequentist, Bayesian

**B** Bayesian, Frequentist

**C** Prior, Posterior

**D** Posterior, Prior

**Q** For datasets having unbalanced classes, which of the following performance metric is not preferred?

**A** Precision

**B** Confusion Metric

**C** F1-score

**D** Accuracy

**Q**  Structural equation modeling (SEM) is a \_\_\_\_\_\_\_\_\_\_\_\_ statistical analysis technique that is used to analyze structural relationships.

**A** None of the options

**B** Univariate

**C** Bivariate

**D** Multivariate

**Q** How many phases are there in Data Analytics Life Cycle?

**A** 5

**B** 4

**C** 7

**D** 6

**Q**  \_\_\_\_\_\_\_\_\_\_ is the probability of rejecting the null hypothesis when it is false.

**A** β

**B** α

**C** Type I error

**D** Type II error

**Q** \_\_\_\_\_\_\_\_\_\_ is a technique that helps to find the optimum solution for a given problem.

**A** Linear programming

**B** Agent-based modelling

**C** Dynamic programming

**D** Discrete event simulation

**Q** When two features are conditionally independent, we can calculate their co-occurrence as a simple \_\_\_\_\_\_\_.

**A** Subtraction

**B** Addition

**C** Division

**D** Multiplication

**Q**  What does high entropy indicates

**A** The randomness in the information being processed

**B** There is an observable relationship in the information

**C** Easier it is to draw conclusions from the information

**D** Prediction of coin toss results

**Q**  Which hypotheses testing method should be used if a data scientist wants to know how different levels of independent variable affect the dependent variable at different levels of another independent variables?

**A** Two-way analysis of variance

**B** Factorial analysis of variance method

**C** Analysis of covariance method

**D** Multiple correlation method

**Q**  Coefficient of variations of two distributions are 65 and 75 and their standard deviations are 32 and 49 respectively. What are their arithmetic means?

**A** 42.66, 75.38

**B** 49.23, 65.33

**C** 48, 65

**D** 33, 26

**Q**  DIKW pyramid model is used to represent the:

**A** functional relationships between Decision, Innovation, Knowledge, and Wisdom.

**B** functional relationships between Data, Information, Knowledge, and Wisdom.

**C** programming dependencies between Decision, Innovation, Knowledge, and Wisdom.

**D** programming dependencies between Data, Information, Knowledge, and Wisdom.

BDT

**Question 1:** The default storage level in Spark is-

* DISK\_ONLY
* MEMORY\_ONLY
* HEAP\_ONLY
* MEMORY\_AND\_DISK

**Question 2:** The HDFS command to check the inconsistencies in file stored in HDFS is?

* Get
* sudo jps
* fck
* fsck

**Question 3:** HBase store data in table based on

* Column-family based
* Document based
* Schema based
* Table based

**Question 4:** Which is not a function of the Name Node?

* Handle client requests
* Keep metadata information
* Manage the file system namespace

**Question 1:** The use of scan command in Hbase is-

* To validate the data in HBase
* To view the data in HTtable
* To search the table in HDFS
* To see the all directories in HDFS

**Question 2:** To fetching information from a source of database is called -

* Extracting
* Loading
* Updation
* Transforming

**Question 3:** Open -source platform Apache Kafka was implemented by?

* IBM
* TCS
* Apache Software Foundation
* LinkedIn

**Question 4:** In Hbase Truncate command is used to-

* To delete the complete table from HBase.
* To validate all the HTtable present in HBase.
* Delete the complete data from the table without deleting the table structure.
* To integrate the data of all HTtable.

The provided image contains seven multiple-choice questions. Here's the text conversion:

**Question 1:** Which module is used for structured data processing in Spark?

* MLlib
* SparkR
* GraphX
* SparkSQL

**Question 2:** Kafka Consumer is an API, which can be used for?

* Storing data in partitions
* Managing the kafka cluster
* Producing data for topics
* Reading data from a topic

**Question 3:** Hadoop 1.0 framework was launched with -

* Mapreduce + HDFS
* Yarn + Mapreduce framework
* Mapreduce + YARN
* Mapreduce + YARN + HDFS

**Question 4:** Which HiveQL does not support the following Features?

* Transactions
* Joins
* Indexes
* Views

**Question 5:** Hadoop use the following scheduler in Hadoop ecosystem?

* Hive
* Sqoop
* Flume
* Oozie

**Question 6:** Hadoop framework can be deployed on-

* Hybrid Mode
* Standalone Mode
* Distributed Mode
* Live Cluster Mode

**Question 7:** Apache Spark was developed in-

* 2010
* 2006
* 2012
* 2009

**Question 1:** Shuffle performs the following key role in a Map Reduce -

* It distributes data blocks across the Data Nodes
* It combines the output of multiple mappers
* It connects mappers to the reducers
* It sorts and groups the keys of the intermediate output from the mapper

**Question 2:** The secondary Name Node function is:

* To continue the functioning of Name Node
* To provide advanced technology as compared with primary
* To serve as a backup for Name Node
* To serve as a checkpoint mechanism for primary Name Node

**Question 3:** HBase firstly reads the data by using -

* HFile
* Block Cache
* WAL
* Memstore

**Question 4:** ZooKeeper has the following role in the Hadoop ecosystem?

* Cluster Coordination
* Stream Processing
* Data Serialization
* Scripting Platform

**Question 5:** The HDFS command put is used to

* Copy files from HDFS to local file system.
* Copy files from HDFS to local file system.
* Copy files from local file system to HDFS.
* Erase data from trash

**Question 6:** The operator which executes a shell command from the Hive shell?

* ^
* !
* ;
* .

**Question 1:** Before data moving to warehouse, the extracted data can be validated in -

* Data Lake
* Staggering
* Staging
* Studying

**Question 2:** What is the role of the map function in Map Reduce?

* To sort the input data
* To combine the input data
* To convert input data into key-value pairs
* To summarize the input data

**Question 3:** HDFS ensure the integrity of the stored data through?

* By comparing the replicated data blocks with each other
* By comparing the replicated blocks to the master copy (shuffle and sort)
* Checksums
* Error logs

**Question 4:** The default block size in HDFS is?

* 128 MB
* 256 MB
* 32 MB
* 64 MB

**Question 5:** Spark is a data processing framework that offers following features?

* Fault tolerance
* Real-time processing
* High latency
* Limited scalability

**Question 6:** Spark does not support the following language-

* Pascal
* Scala
* Java
* Python

The provided image contains seven multiple-choice questions. Here's the text conversion:

**Question 1:** Choose the correct option, which is not a complex data type in Hive?

* Map
* STRUCT
* Matrix
* Array

**Question 2:** ETL can be used to build a -

* Data Core Center
* Data Lake
* Data Warehouse
* Control DBMS

**Question 3:** Machine learning library offer by the Spark is-

* TensorFlow
* Keras
* Seaborn
* MLlib

**Question 4:** Which server is mandatory to start before starting Kafka server?

* Kafka Producer
* Kafka Topic
* Kafka Consumer
* ZooKeeper server

**Question 5:** Product Reconciliation is also known as-

* Data Mining
* ETL Testing
* ETL loading
* Data validation

**Question 6:** Hadoop has the following key features?

* Limited scalability
* Fault tolerance
* Real-time processing
* High latency

**Question 7:** The max size of row key in HBase is

* 128KB
* 64KB
* 32KB
* Unlimited

**Question 1:** The name of company which has the world's largest Hadoop cluster?

* Apple
* Google
* Facebook
* Apache Software Foundation

**Question 2:** Choose the correct sequence of data flow in MapReduce - A. InputFormat B. Mapper C. Combiner D. Reducer E. Partitioner F. OutputFormat

* ABCDEF
* ABCEDF
* ABCDFE
* ABCFCE

**Question 3:** The file that controls the logging details of Mapreduce huse is-

* Hive-exec-log4j.properties
* Hive-create-log4j.properties
* Hive-log4j.properties
* Hive-cli-log4j.properties

**Question 4:** The default replication factor in HDFS is-

* 2
* 4
* 1
* 3

**Question 5:** Kafka maintains feeds of messages in special categories is called-

* Domains
* Chunks
* Messages
* Topics

**Question 6:** The correct statement about the Map Reduce is?

* It is a real-time processing system.
* It can only process data stored in a Hadoop Distributed File System (HDFS).
* It can only process structured data.
* It is a batch processing system.

DBT

*In Apache Cassandra, what CQL statement can be used to update the total salary of employees to 20000 for those whose commission is '0'?*

* A: ALTER employees SET total\_salary = 20000 WHERE commission = '0';
* B: MODIFY employees SET total\_salary = 20000 WHERE commission = '0';
* C: UPDATE employees SET total\_salary = 20000 WHERE commission = '0';
* D: CHANGE employees SET total\_salary = 20000 WHERE commission = '0';

*The join where all possible row combinations are produced is called \_\_\_\_\_\_\_\_*

* A: OUTER
* B: CARTESIAN
* C: NATURAL
* D: INNER JOIN

*You have executed a series of SQL statements within a transaction to update multiple tables. Due to an unexpected error in the middle of the transaction, some changes were applied incorrectly. What SQL statement should you use to undo the changes made so far and restore the database to its original state?*

* A: CANCEL;
* B: UNDO;
* C: ROLLBACK;
* D: REVERT;

*Which of the following is a common data cleaning task?*

* A: Duplicating errors
* B: Ignoring missing values
* C: Removing duplicate records
* D: Introducing outliers

*Which statement is used to create a view in MySQL?*

* A: ADD VIEW
* B: VIEW CREATE
* C: INSERT INTO VIEW
* D: CREATE VIEW

*Consider the design of a database schema for an online bookstore. The system needs to store information about books, authors, and customer orders. Each book has a unique ISBN, title, and genre. Each author has a unique author ID, name, and biography. Each customer has a unique customer ID, name, and contact information.*

*What would be an appropriate way to represent the relationship between books and authors in the database schema?*

* A: Create a table for books and a separate table for authors, linking them through a common attribute like author ID in the books table.
* B: Create a separate table for books and a separate table for authors with no direct relationship between them.
* C: Create a single table merging information for both books and authors with columns for ISBN, title, genre, author ID, author name, and biography.
* D: Include author information as columns within the books table.

*Which of the following statements is used to create a new database in MySQL?*

* A: CREATE INSTANCE
* B: CREATE TABLE
* C: CREATE SCHEMAS
* D: CREATE DATABASE

What is the primary data model used by MongoDB?

* A: Graph model
* B: Key-Value model
* C: Document-oriented model
* D: Relational model

What is a DBMS, and what is its primary need?

* A: DBMS stands for Digital Business Monitoring System, and its primary need is to analyze online consumer behavior.
* B: DBMS stands for Database Management System, and its primary need is to efficiently and securely store, manage, and retrieve data.
* C: DBMS stands for Database Management System, and its primary need is to design computer databases.
* D: DBMS stands for Data Business Management System, and its primary need is to enhance business decision-making.

Consider the following SQL query:

SELECT AVG(salary) FROM employees

WHERE department\_id IN (

SELECT department\_id

FROM departments

WHERE location\_id = 1700

);

What does this query do?

* A: Deletes the employees in departments located at location\_id 1700.
* B: Inserts new records with the average salary of employees from departments at location\_id 1700.
* C: Retrieves the average salary of employees in all departments.
* D: Calculates the average salary of all employees in departments located at location\_id 1700.

Which Cassandra Query Language (CQL) statement is used to create a new keyspace?

* A: CREATE DATABASE
* B: ADD KEYSPACE
* C: CREATE KEYSPACE
* D: INSERT KEYSPACE

You have a table named orders with columns order\_id, customer\_id, and order\_date. Write an SQL query to retrieve the total number of orders for each customer.

* A: SELECT COUNT(order\_id), customer\_id FROM orders GROUP BY order\_date;
* B: SELECT customer\_id, COUNT(order\_id) FROM orders GROUP BY customer\_id;
* C: SELECT SUM(order\_id), customer\_id FROM orders GROUP BY customer\_id;
* D: SELECT AVG(order\_id), customer\_id FROM orders GROUP BY order\_date;

SELECT product\_name, price FROM products ORDER BY price DESC;

What does this query do?

A: Deletes records from the "products" table where the price is in descending order.

B: Retrieves product names and prices from the "products" table and sorts them in descending order based on price.

C: Updates the prices of products in the "products" table in descending order.

D: Retrieves product names and prices from the "products" table and sorts them in ascending order based on price.

What CQL datatype is used for representing a true or false value?

* A: value1
* B: boolean
* C: text
* D: varchar

DELETE FROM customers WHERE country = 'USA';

What does this query do?

A: Updates the country of all customers to 'USA'.

B: Retrieves the count of customers from the "customers" table with the country 'USA'.

C: Modifies the city of all customers to 'USA'.

D: Deletes all records from the "customers" table with the country 'USA'.

Data Warehouse provides

A: Storage, Functionality, Responsiveness to queries

B: Demand and Supply Responsiveness

C: Transaction Responsiveness

D: None of the options

CREATE VIEW CDAC AS SELECT a, b FROM t;

A: View

B: Column

C: Table

D: Database

What is the purpose of the "\_id" field when creating a new document in MongoDB?

A: It must be manually specified by the user.

B: It is not required when inserting a new document.

C: It is automatically generated as a unique identifier for the document.

D: It is used to define the data type of the document.

In MongoDB, how can you insert multiple documents into a collection in a single operation?

* A: db.collection.insert()
* B: db.collection.insertMany()
* C: db.collection.addMany()
* D: db.collection.createMany()

Identify the TRUE statement concerning The Foundation Rule in Codd’s 12 Rules:

* A: The primary key table, table name, and column name are characteristics that allow access to the precise data points (value) logically from a relational database.
* B: Relational databases are required.
* C: Null values are treated as database records according to this rule.
* D: Databases contain wide variety of information, and each row and column of such must relate to this information.

Which of the following statement(s) is/are correct regarding a relation in second normal form?

* A: Neither of option
* B: It is in first normal form
* C: Every non-key attribute is fully and functionally independent of the primary key
* D: Both the options

What type of database is MongoDB?

* A: In-Memory Database
* B: Object Database
* C: Relational Database
* D: NoSQL Database

Assuming a table named "employees" with columns "employee\_name,""hire\_date," and "title," which SQL query can be used to list "employee\_name" and "hire\_date" in descending order of "hire\_date"?

* A: SELECT employee\_name, hire\_date FROM employees ORDER BY hire\_date ASC;
* B: SELECT employee\_name, hire\_date FROM employees ORDER BY hire\_date;
* C: SELECT employee\_name, hire\_date FROM employees ORDER BY hire\_date DESC;
* D: SELECT employee\_name, hire\_date FROM employees SORT BY hire\_date;

\_\_\_\_\_\_\_\_ command displays the list of databases.

* A: display dbs
* B: show db
* C: show dbs
* D: show data

Which of the following method returns one document?

* A: selectOne()
* B: findOne()
* C: findOne(1)
* D: all the options

Which MongoDB aggregation stage is used to group documents based on a specified key?

* A: $match
* B: $group
* C: $sort
* D: $project

MongoDB is a \_\_\_\_\_\_ database that provides high performance, high availability, and easy scalability.

* A: all of the options
* B: Graph
* C: Document
* D: key-value

Which of the following statement is true?

* A: Both TRUNCATE and DELETE statement does not free the table's space.
* B: DELETE frees the table space while TRUNCATE does not.
* C: TRUNCATE frees the table space while DELETE does not.
* D: Both TRUNCATE and DELETE statements free the table's space.

The left and right joins are also known as \_\_\_\_\_\_.

* A: NATURAL JOIN
* B: OUTER JOIN
* C: CARTESIAN JOIN
* D: INNER JOIN

What is a view?

* A: None of the options
* B: A view is a special stored procedure executed when a certain event occurs.
* C: A view is a database diagram.
* D: A view is a virtual table with results of executing a pre-compiled query. A view is not part of the physical database schema, while the regular tables are.

What is the main purpose of a trigger in a MySQL database?

* A: To define foreign key constraints
* B: To update the database schema
* C: To create temporary tables
* D: To perform an action automatically in response to a specific event

Which of the following statements is used to delete a database in MySQL?

* A: DELETE DATABASE
* B: DROP DATABASE
* C: REMOVE DATABASE
* D: ERASE DATABASE

What is the primary purpose of using views in a MySQL database?

* A: To enforce data integrity constraints
* B: To create temporary tables
* C: To store data permanently
* D: To improve performance by predefining complex queries

What is the primary key used for in Cassandra?

* A: To uniquely identify a column in a table
* B: To uniquely identify a row in a table
* C: To uniquely identify a table in a keyspace
* D: To uniquely identify a node in the cluster

UPDATE products SET stock\_quantity = stock\_quantity - 10

WHERE category = 'Electronics' AND stock\_quantity >= 10;

What does this query do?

A: Updates the stock quantity of products in the 'Electronics' category by subtracting 10, only if the current quantity is 10 or more.

B: Calculates the average stock quantity for products in the 'Electronics' category.

C: Deletes products from the 'Electronics' category with a stock quantity of 10 or more.

D: Inserts 10 new products into the 'Electronics' category.

Assume you have successfully completed a complex set of database modifications using SQL statements within a transaction. What is the purpose of issuing the SQL command COMMIT; at the end of the transaction?

* A: To temporarily hold the changes without committing them to the database.
* B: To roll back the transaction and undo all changes made.
* C: To create a backup of the database before finalizing the changes.
* D: To save the changes made within the transaction permanently.

Which of the following operations is used to switch to new database mydb?

* A: use mydbs
* B: use mydb
* C: use db
* D: use dbs

In Apache Cassandra, what is the primary purpose of the "keyspace"?

* A: To store data in tabular form
* B: To organize tables into logical groups
* C: To define the schema for a table
* D: To establish a connection to the database

What MongoDB operation is used to modify multiple documents that match a specified filter?

* A: db.collection.editMany()
* B: db.collection.updateMany()
* C: db.collection.modifyMany()
* D: db.collection.alterMany()

What is the purpose of handling outliers during data cleaning?

* A: To create duplicates of existing records
* B: To introduce noise into the dataset
* C: To preserve data accuracy
* D: To ignore errors intentionally

\*\*Q 1:\*\* You have a table named 'Orders' with columns 'OrderID', 'CustomerID', and 'TotalAmount.' You want to retrieve the orders where the total amount is greater than the average total amount for each customer. Which SQL query correctly achieves this using a correlated subquery?

\*\*A\*\*

SELECT OrderID, CustomerID, TotalAmount

FROM Orders

WHERE TotalAmount > (SELECT AVG(TotalAmount) FROM Orders WHERE CustomerID = Orders.CustomerID);

\*\*B\*\*

SELECT OrderID, CustomerID, TotalAmount

FROM Orders

HAVING TotalAmount > AVG(TotalAmount) OVER (PARTITION BY CustomerID);

\*\*C\*\*

SELECT OrderID, CustomerID, TotalAmount

FROM Orders

WHERE TotalAmount > AVG(TotalAmount) OVER (PARTITION BY CustomerID);

\*\*D\*\*

SELECT OrderID, CustomerID, TotalAmount

FROM Orders

HAVING TotalAmount > (SELECT AVG(TotalAmount) FROM Orders);

\*\*Q 2:\*\* In a stored procedure, what happens if an exception is raised and not handled?

\*\*A\*\* The stored procedure will terminate, and the transaction will be rolled back

\*\*B\*\* The stored procedure will continue executing normally

\*\*C\*\* The stored procedure will wait for user input to decide the action

\*\*D\*\* The exception will be ignored, and execution will continue

\*\*Q 3:\*\* In a scenario where a table has multiple columns that are often used together in queries, which type of index is most suitable to improve query performance?

\*\*A\*\* Full-text Index

\*\*B\*\* Composite Index

\*\*C\*\* Single-column Index

\*\*D\*\* Unique Index

\*\*Q 4:\*\* Which of the following query will display all cars whose price is > all cars sold in pune?

\*\*A\*\*

```sql

select \* from carlist where price > ( select maximum price from carlist where address='pune');

```

\*\*B\*\*

```sql

select \* from carlist where price > all ( select price from carlist);

```

\*\*C\*\*

```sql

select \* from carlist where price in ( select max(price) from carlist where address='pune');

```

\*\*D\*\*

```sql

select \* from carlist where price > ( select max(price) from carlist where address='pune');

```

\*\*Q 5:\*\* Which feature is commonly associated with NoSQL databases?

\*\*A\*\* Fixed schema for data

\*\*B\*\* Structured Data

\*\*C\*\* Limited support for large datasets

\*\*D\*\* Horizontal scalability

\*\*Q 6:\*\* What is the purpose of the MySQL Workbench's "Performance Dashboard" feature?

\*\*A\*\* Real-time monitoring of database activities

\*\*B\*\* Query optimization and performance tuning

\*\*C\*\* Visual design and modeling of database schemas

\*\*D\*\* Automatic generation of SQL statements

\*\*Q 7:\*\* Which statement accurately differentiates between the TRUNCATE and DELETE statements in SQL's Data Manipulation Language (DML)?

\*\*A\*\* DELETE demands conditions for execution, whereas TRUNCATE eliminates all records without conditions.

\*\*B\*\* TRUNCATE boasts speed but lacks rollback capability, while DELETE is slower yet allows rollback.

\*\*C\*\* TRUNCATE is designed for specific record removal, whereas DELETE removes all records.

\*\*D\*\* DELETE falls under DDL, whereas TRUNCATE is categorized as DML.

\*\*Q 8:\*\* Consider a MySQL stored procedure named `CalculateAverage` that calculates the average salary of employees in a given department. The procedure takes a department name as an IN parameter and returns the average salary as an OUT parameter. Which type of parameter is suitable for representing the department name in this context?

\*\*A\*\* IN parameter

\*\*B\*\* OUT parameter

\*\*C\*\* INPUT-OUTPUT parameter

\*\*D\*\* INOUT parameter

\*\*Q 9:\*\* In the context of database transactions, what does the `ROLLBACK` statement do?

\*\*A\*\* Commits the changes made during a transaction.

\*\*B\*\* Adds a new record to the database.

\*\*C\*\* Creates a new transaction within the database.

\*\*D\*\* Undoes or cancels the changes made during a transaction.

\*\*Q 10:\*\* You have a table named 'Products' with columns 'ProductID', 'ProductName', and 'Price.' You want to retrieve the top 5 most expensive products. Which SQL query correctly achieves this using the SQL Standard Syntax for Limiting Rows?

\*\*A\*\*

```sql

SELECT ProductName, Price

FROM Products

ORDER BY Price DESC

LIMIT 5;

```

\*\*B\*\*

```sql

SELECT ProductName, MAX(Price) AS Top5Expensive

FROM Products

LIMIT 5;

```

\*\*C\*\*

```sql

SELECT TOP 5 ProductName, Price

FROM Products

ORDER BY Price DESC;

```

\*\*D\*\*

```sql

SELECT ProductName, Price

FROM Products

ORDER BY Price DESC

FETCH FIRST 5 ROWS ONLY

```

\*\*Q 11:\*\* In a MySQL database, you have a table named 'Employees' with columns 'EmployeeID', 'Salary', and 'DepartmentID'. Which SQL query accurately retrieves the highest salary within each department, considering only those departments where the average salary is greater than 50000?

\*\*A\*\*

```sql

SELECT DepartmentID, MAX(Salary) AS HighestSalary

FROM Employees

GROUP BY DepartmentID

HAVING AVG(Salary) > 50000;

```

\*\*B\*\*

```sql

SELECT DepartmentID, MAX(Salary) AS HighestSalary

FROM Employees

GROUP BY DepartmentID

HAVING MAX(Salary) > 50000;

```

\*\*C\*\*

```sql

SELECT DepartmentID, MAX(Salary) AS HighestSalary

FROM Employees

WHERE AVG(Salary) > 50000

GROUP BY DepartmentID;

```

\*\*D\*\*

```sql

SELECT DepartmentID, MAX(Salary) AS HighestSalary

FROM Employees

WHERE DepartmentID IN (SELECT DepartmentID FROM Employees WHERE AVG(Salary) > 50000)

GROUP BY DepartmentID;

```

\*\*Q 12:\*\* Which issue is mitigated by the application of Third Normal Form (3NF) in the normalization process?

\*\*A\*\* Data redundancy arising from transitive dependencies.

\*\*B\*\* Functional dependency between attributes

\*\*C\*\* Partial dependency on a composite key

\*\*D\*\* Presence of repeating groups of data.

\*\*Q 13:\*\* Consider a MongoDB collection named "employees" with documents representing employee data. Using the MongoDB shell, write a query to find all employees whose salary is greater than $50,000. Which query accomplishes this task?

\*\*A\*\* `db.find(employees, { salary: { $gt: 50000 } })`

\*\*B\*\* `db.employees.query({ salary: { $gt: 50000 } })`

\*\*C\*\* `db.employees.find({ salary: { $gt: 50000 } })`

\*\*D\*\* `db.employees.find({ salary: > 50000 })`

\*\*Q 15:\*\* Which statement is used to make the changes by a transaction permanent in SQL?

\*\*A\*\* COMMIT

\*\*B\*\* SAVE ALL

\*\*C\*\* LOCK

\*\*D\*\* SAVEPOINT

\*\*Q 16:\*\* Assuming you have a MongoDB collection named "products" containing documents with a field "category" representing product categories. Write a query to find the distinct product categories in the collection. Which query accomplishes this task?

\*\*A\*\* `db.products.unique("category")`

\*\*B\*\* `db.distinct(products, "category")`

\*\*C\*\* `db.products.find().distinct("category")`

\*\*D\*\* `db.products.distinct("category")`

\*\*Q 17:\*\* What will be output of following query?

```sql

Select id, name

From cust\_pune

Union

Select id, name, addr

From cust\_mumbai;

```

\*\*A\*\* It will display all customers from pune and mumbai

\*\*B\*\* The query is wrong, it will show error

\*\*C\*\* It will display only customers from mumbai

\*\*D\*\* It will display only customers from pune.

\*\*Q 18:\*\* You are implementing a trigger in MySQL to update an audit log table whenever a record is deleted from a primary table. Which type of trigger (BEFORE or AFTER) would be more suitable for this scenario?

\*\*A\*\* Both can be used interchangeably.

\*\*B\*\* BEFORE

\*\*C\*\* It depends on the specific use case

\*\*D\*\* AFTER

\*\*Q 19:\*\* What is the drawback of using too many indexes on a table?

\*\*A\*\* Decreased data security

\*\*B\*\* Increased storage space and slower write operations

\*\*C\*\* Decreased read query performance

\*\*D\*\* Enforced data consistency

\*\*Q 20:\*\* In a real-world scenario, when might you choose to use a BEFORE trigger in MySQL?

\*\*A\*\* To enforce data integrity constraints before changes are applied

\*\*B\*\* To log changes made to the database for audit purposes

\*\*C\*\* There is no practical use for BEFORE triggers in MySQL

\*\*D\*\* To perform actions after the changes have been committed to the database

\*\*Q 21:\*\* Which of the following type of trigger has both OLD and NEW special variables available?

\*\*A\*\* INSERT

\*\*B\*\* UPDATE

\*\*C\*\* SELECT

\*\*D\*\* DELETE

\*\*Q 22:\*\* Consider a table named 'Students' with columns 'StudentID', 'StudentName', and 'TestScore'. You want to retrieve the names of students who have not taken the test yet. Which SQL query accurately achieves this, considering that the 'TestScore' column may contain NULL values?

\*\*A\*\*

```sql

SELECT StudentName

FROM Students

WHERE TestScore != NULL;

```

\*\*B\*\*

```sql

SELECT StudentName

FROM Students

WHERE TestScore = '';

```

\*\*C\*\*

```sql

SELECT StudentName

FROM Students

WHERE TestScore IS NULL;

```

\*\*D\*\*

```sql

SELECT StudentName

FROM Students

WHERE TestScore = NULL;

```

\*\*Q 24:\*\* Which storage engine in MySQL is known for supporting transactions and providing high reliability, making it suitable for applications with complex relationships between tables?

\*\*A\*\* MyISAM

\*\*B\*\* InnoDB

\*\*C\*\* ARCHIVE

\*\*D\*\* MEMORY

\*\*Q 25:\*\* You are designing a database for a library system, and you want to ensure that each book in the 'Books' table has a unique ISBN (International Standard Book Number). Which type of constraint would you apply to the 'ISBN' column while 'Books' table is already having 'book\\_code' column as an identifier?

\*\*A\*\* FOREIGN KEY constraint

\*\*B\*\* UNIQUE constraint

\*\*C\*\* CHECK constraint

\*\*D\*\* PRIMARY KEY constraint

\*\*Q 26:\*\* In MySQL, what is the primary purpose of a cursor in the context of database operations?

\*\*A\*\* To execute SQL queries

\*\*B\*\* To traverse and process a result set row by row

\*\*C\*\* To manage database connections

\*\*D\*\* To store and retrieve data from tables

\*\*Q 27:\*\* Which of the following functions will convert String "Hello" into "\*\*\*\*\*Hello"?

\*\*A\*\* `rpad('Hello',10,'\*')`

\*\*B\*\* `lpad('Hello',5,'\*')`

\*\*C\*\* `rpad('Hello',5,'\*')`

\*\*D\*\* `lpad('Hello',10,'\*')`

\*\*Q 28:\*\* Consider a scenario where a database system is handling a high volume of concurrent transactions, and there is a need to maintain the consistency of data. Which ACID property plays a crucial role in ensuring that each transaction brings the database from one valid state to another, preserving data correctness even in the presence of concurrent activities?

\*\*A\*\* Atomicity

\*\*B\*\* Isolation

\*\*C\*\* Consistency

\*\*D\*\* Durability

\*\*Q 29:\*\* In MySQL stored procedures, what is the purpose of the `DECLARE` statement in the context of error handling?

\*\*A\*\* It declares the type of error action to be taken

\*\*B\*\* It declares an exception handler

\*\*C\*\* It declares the type of exception to be handled

\*\*D\*\* It declares a new variable local to the stored procedure

\*\*Q 30:\*\* You are tasked with modifying an existing table named 'Products' in a MySQL database. You need to add a new column named 'DiscountPercentage' to the table. Which SQL statement achieves this?

\*\*A\*\*

```sql

UPDATE TABLE Products

SET DiscountPercentage DECIMAL(5, 2);

```

\*\*B\*\*

```sql

MODIFY TABLE Products

ADD COLUMN DiscountPercentage DECIMAL(5, 2);

```

\*\*C\*\*

```sql

ALTER TABLE Products

ADD COLUMN DiscountPercentage DECIMAL(5, 2);

```

\*\*D\*\*

```sql

INSERT INTO Products

(DiscountPercentage DECIMAL(5, 2));

```

\*\*Q 31:\*\* In the context of stored procedures, what is the purpose of the IN parameter?

\*\*A\*\* To return a value from the stored procedure

\*\*B\*\* To pass input values into the stored procedure

\*\*C\*\* To provide output values from the stored procedure

\*\*D\*\* To perform conditional branching within the stored procedure

\*\*Q 32:\*\* In a database transaction, you want to create a savepoint named 'BeforeUpdate' before making updates to a critical table. Which SQL statement correctly achieves this?

\*\*A\*\* `ROLLBACK TO Savepoint 'BeforeUpdate';`

\*\*B\*\* `SAVEPOINT BeforeUpdate;`

\*\*C\*\* `CREATE SAVEPOINT BeforeUpdate;`

\*\*D\*\* `SAVEPOINT = 'BeforeUpdate';`

\*\*Q 33:\*\* In SQL, what is the purpose of the `INSERT INTO ... SELECT` statement?

\*\*A\*\* Deletes data from a table

\*\*B\*\* Copies data from one table to another

\*\*C\*\* Renames a table

\*\*D\*\* Copies the structure of a table

\*\*Q 34:\*\* When working with MongoDB operators, what does the `$elemMatch` operator primarily facilitate?

\*\*A\*\* Sorting documents in a collection

\*\*B\*\* Updating multiple documents simultaneously

\*\*C\*\* Querying arrays for matching elements

\*\*D\*\* Indexing fields

\*\*Q 35:\*\* What is the MongoDB equivalent of a tuple or record in a relational database?

\*\*A\*\* Indexes

\*\*B\*\* Documents

\*\*C\*\* Collections

\*\*D\*\* Fields

\*\*Q 36:\*\* Which of the following will create an index on table car based on field price?

\*\*A\*\* `create index price\_indx on car(price)`

\*\*B\*\* `alter table car add index price\_indx on car(price)`

\*\*C\*\* `create unique index price\_indx car(price)`

\*\*D\*\* `create index price-indx on price for car`

\*\*Q 37:\*\* In the context of NoSQL databases, what is a characteristic feature of a Key-Value Store?

\*\*A\*\* It supports complex queries using SQL

\*\*B\*\* Data is organized in tables with predefined schema

\*\*C\*\* It uses a graph structure to represent relationships

\*\*D\*\* Each data item is stored as a key-value pair

\*\*Q 38:\*\* Consider two tables, 'Employees' and 'Departments,' with the following structures:

Employees: EmployeeID, EmployeeName, Salary, DepartmentID

Departments: DepartmentID, DepartmentName, Location

You want to retrieve a list of all employee names along with their respective department names for employees earning a salary greater than 50000. Which SQL query correctly achieves this using the SQL Standard Syntax for Joins?

\*\*A\*\*

```sql

SELECT EmployeeName, DepartmentName

FROM Employees, Departments

CROSS JOIN Departments

WHERE Salary > 50000;

```

\*\*B\*\*

```sql

SELECT EmployeeName, DepartmentName

FROM Employees

JOIN Departments ON Employees.DepartmentID = Departments.DepartmentID

WHERE Employees.Salary > 50000;

```

\*\*C\*\*

```sql

SELECT EmployeeName, DepartmentName

FROM Employees

JOIN Departments FOR (DepartmentID)

WHERE Salary > 50000;

```

\*\*D\*\*

```sql

SELECT EmployeeName, DepartmentName

FROM Employees, Departments

WHERE Employees.Salary > 50000 AND Employees.DepartmentID = Departments.DepartmentID;

```

\*\*Q 40:\*\* What is the primary role of a Primary Key in a relational database table?

\*\*A\*\* It establishes the relationships between tables.

\*\*B\*\* It is utilized for organizing the records within the table

\*\*C\*\* It serves as a unique identifier for each record in the table.

\*\*D\*\* It holds descriptive information about the record.

DV

Which Of the following, which is NOT a VBA feature?

Conditional Formatting

Dynamic Typing

Debugging Tools

OOP (Object-Oriented Programming)

In a dual-axis chart, what does the second axis typically represent?

A different time period

A secondary measure or scale

A different category of data

A comparison of values

What distinguishes a measure in Tableau from a dimension?

A measure is used to carry out computations, whereas a dimension is used to group data together.

A measure is a numerical variable, but a dimension is a categorical one.

In Tableau, there is no distinction between a dimension and a measure.

A measure is a continuous field, whereas a dimension is a discrete field.

Why is data sorting important in data visualization?

To add color to visuals

To organize data in a meaningful order

To filter out irrelevant data

To perform numeric calculations

What is tested during quality assurance?

Raw data

Model performance and functionality

Data preprocessing techniques

Model planning phase

The VLOOKUP function is used for:

Both vertical and horizontal lookup

Random lookup

Horizontal lookup

Vertical lookup

What is the first step in the process of information gathering for BI?

Data analysis

Decision making

Data visualization

Data collection

A strategic approach to BI involves:

Aligning BI goals with overall business objectives

Short-term focus

Ignoring competitive analysis

No planning

What is a key consideration when choosing appropriate visuals for data presentation

The popularity of the visual

The type and characteristics of the data

The number of pages in the report

The color scheme of the visual

In a Bullet graph, what does the length of the bar represent?

Multiple data points

A single data point

The average of data

The range of data

Which of the following describes the proper VBA comment syntax?

//

--

'

How does storytelling contribute to effective dashboard design?

It adds value to the content

It helps guide users through the data and insights

It distracts users from the data

It is relevant in dashboard design

In data visualization, what does a Tree map represent?

Comparison of values across categories

Connections and relationships

Changes over time

Hierarchical relationships

In Tableau, what is a data source?

A method of organizing similar dimensions together..

A method for adding a custom computation to a table or graphic.

A mechanism to link to and retrieve data from external sources.

A technique for limiting the amount of data that is shown in a table or chart.

What does LOD (Level of Detail) Expressions enable you to do?

Create new data points

Sort data based on specific criteria

Perform calculations at different levels of granularity

Define color schemes

Which term refers to the process of ensuring data accuracy, consistency, and reliability?

Data visualization

Data mining

Data governance

Data analysis

During management approval, what is reviewed?

Only the final model

Only the discovery phase

Only data preparation techniques

Entire process, documentation, and model performance

What is the primary purpose of a Packed bubble chart?

To represent changes over time

To display connections and relationships

To show proportions and relationships within a whole

To compare values across categories

What is a best practice for organizing content on a dashboard?

Using a variety of font sizes and styles

Placing the most important information in a corner

Randomly arranging visuals

Creating a logical and organized layout

In interactive visualization, what does visual updation refer to?

Changing the color scheme of the visual

Dynamically updating the visual based on user interactions

Creating new data points

Sorting data alphabetically

Content and knowledge management in BI involves:

Ignoring user feedback

Using outdated information

Organizing and storing information for easy access

Deleting all data

What occurs during the installation phase of the data analytics life cycle?

Model training

Data exploration

Model deployment

Model evaluation

When is a Gantt chart commonly used in data visualization?

To show hierarchical relationships

To display project timelines and tasks

To represent changes over time

To compare values across categories

What happens during the operation phase?

Continuous monitoring and maintenance of the model

Model deployment

Model evaluation

Data exploration

The INDEX-MATCH combination is often used as an alternative to:

MATCH

HLOOKUP

LOOKUP

VLOOKUP

Which tool in the Data Analysis Tool Pack is used for descriptive statistics?

Correlation

Regression

Histogram

Analysis of Variance (ANOVA)

In data visualization, what does the term "color" represent as a visual encoding?

Data analysis tool

A way of representing data through different colors

Scaling method

Data storage format

What is the purpose of data filters in data visualization?

To perform data calculations

To limit the data displayed in the visual

To manipulate text data

To sort data alphabetically

What is the purpose of gathering BI requirements?

User expectations, data sources, and project scope

Only technical specifications

Only financial projections

None of the options

What is the main goal of quality assurance in the data analytics life cycle?

Data visualization

Ensuring data privacy

Ensuring the model meets predefined standards

Model deployment

What is the primary goal of the Data Analysis Tool Pack?

Data visualization

Data analysis

Model building

Data preparation

What type of chart is commonly used to represent hierarchical data through rectangular areas?

Scatter plot

Pie chart

Line chart

Tree map

How does an Area chart differ from a Line chart?

Area charts cannot represent changes over time

Line charts only use dots to represent data points

Area charts use filled-in areas beneath the lines to represent data

Area charts are not suitable for hierarchical data

What does the term "annotation" refer to in visual encodings?

Adding text or labels to a visualization to provide context or explanation

A way of collecting data

Data analysis method

Data storage format

How does a Symbol map differ from a Heat map?

Heat maps use symbols to represent data points, while Symbol maps use color

Symbol maps and Heat maps are synonymous terms

Symbol maps use symbols to represent data points, while Heat maps use color

Symbol maps only represent hierarchical data

Which of the following describes a Tableau join type that is not?

Full outer join

Up join

Left join

Inner join

What visual is suitable for comparing parts of a whole?

Bubble chart

Scatter plot

Treemap

Bar chart

In data visualization, what does the term "color" represent as a visual encoding?

Scaling method

A way of representing data through different colors

Data analysis tool

Data storage format

How can data updation enhance interactive visualization?

By organizing data in alphabetical order

By dynamically updating data based on user actions

By manipulating text data

By adding more color to visuals

The formula "= SUM(A1:A5)" calculates:

The average of A1 to A5

The product of A1 to A5

The sum of A1 to A5

The maximum value in A1 to A5

JAVA

class First {

static int a = 7;

First(int x) {

a = x;

}

}

class Test {

public static void main(String args[]) {

First obj1 = new First(8);

First obj2 = new First(9);

System.out.println(obj1.a);

}

}

Compilation error

8

7

9

Which of the following statements is CORRECT for creating a two-dimensional array?

* int arr[] = new int[5][3];
* int arr[][] = new int[5][];
* int arr[][] = new int[][3];
* int arr[][] = new int[5][3];

import java.util.\*;

class Student {

int roll;

String name;

Student(int roll, String name) {

this.roll = roll;

this.name = name;

}

}

class StudList {

public static void main(String args[]) {

LinkedList<Student> sList1 = new LinkedList<Student>();

LinkedList<Student> sList2 = new LinkedList<Student>();

Student stud = new Student(1, "Mariya");

sList1.add(stud);

sList1.add(new Student(2, "David"));

sList1.add(new Student(3, "Mira"));

sList2.add(stud);

sList2.add(new Student(2, "David"));

sList2.add(new Student(4, "Mohit"));

sList1.removeAll(sList2);

for (Student s : sList1) {

System.out.print(s.name + "");

}

}

}

**Possible Outputs:**

Mariya Mira

David Mira

Mariya David Mira

Mira

A aObj = new A();

B bObj = new B();

C cObj = new C();

aObj = bObj;

bObj = null;

cObj = new C();

3

0

1

2

**Which of the following is related to Inheritance**

PART\_OF relationship

IS\_A relationship

HAS\_A relationship

NOT\_A relationship

**Which of the followings are TRUE about Generics**

1. Generics works only with objects and not with primitive data types.
2. Type info i.e. T exists at run time
3. Type info i.e. T does not exists at run time
4. Generics does not provide type safety.

i and iii

i, ii and iv

i and ii

Only i

**Which of the following Integer wrapper class method can be used to convert a numeric String e.g. "25" to a primitive integer value.**

valueOf()

toString()

parseInt()

intValue()

class Calculator {

int cal(int a, int b) {

return a / b;

}

}

class Test {

public static void main(String args[]) {

System.out.print("Hi ");

try {

new Calculator().cal(5, 0);

} catch (Exception e) {

System.out.print("exception ");

} catch (ArithmeticException ae) {

System.out.print("arith-exception ");

} finally {

System.out.print("Bye");

}

}

}

Compilation error

Hi Bye

Hi exception Bye

Hi arith-exception Bye

class One {

One() {

System.out.print("One 0-arg ");

}

}

class Two extends One {

int val;

Two() {

System.out.print("Two 0-arg ");

}

Two(int val) {

this(); // Calls the no-arg constructor of the current class (Two())

this.val = val;

System.out.print("Two 1-arg ");

}

}

class OneTwo {

public static void main(String args[]) {

Two t = new Two(5);

}

}

One 0-arg Two 1-arg Two 0-arg

Two 0-arg Two 1-arg One 0-arg

Two 1-arg Two 0-arg One 0-arg

One 0-arg Two 0-arg Two 1-arg

class ValueContainer {

static int val = 1;

static {

val++;

}

static {

val++;

}

ValueContainer() {

val++;

}

void print() {

System.out.println(val);

}

}

class MainClass {

public static void main(String args[]) {

ValueContainer vc1 = new ValueContainer();

ValueContainer vc2 = new ValueContainer();

vc2.print();

}

}

6

4

7

5

**Which of the following statements are TRUE about hashcode of objects**

1. Two different objects can have the same hashcode.
2. Even if two objects are equal using equals() method, their hashcode may differ
3. Hashcode of an object can be a negative value
4. Hashcode of an object must always be a positive value

i & ii

i & iv

ii & iv

i & iii

class MyGen<T> {

void myFun(T x) {

System.out.println(x);

}

}

class MyGenRun {

public static void main(String args[]) {

MyGen<Integer> mg1 = new MyGen<Integer>();

mg1.myFun(10); // Statement 1

mg1.myFun("hello"); // Statement 2

MyGen<String> mg2 = new MyGen<String>();

mg2.myFun(10); // Statement 3

mg2.myFun("hello"); // Statement 4

}

}

Statement 2 & Statement 4

Statement 3 & Statement 4

Statement 2 & Statement 3

Statement 1 & Statement 3

import java.util.Map;

import java.util.TreeMap;

class MapCreator {

public static void main(String args[]) {

Map<Integer, String> myMap1 = new TreeMap<Integer, String>();

myMap1.put(3, "John");

myMap1.put(1, "Kabir");

myMap1.put(2, "Anand");

for (Map.Entry<Integer, String> entry : myMap1.entrySet()) {

System.out.print(entry.getValue() + "");

}

}

}

Can not decide the output order

Anand John Kabir

Compilation error

Kabir Anand John

Which of the following are TRUE about Java NIO?

1. It is non-blocking IO
2. It is blocking IO
3. It is Stream oriented IO
4. It is Channel based IO

i & iv

i & ii

ii & iii

i & iii

First Question (NIO):

Which of the following are TRUE about Java NIO?

i. It is non-blocking IO

ii. It is blocking IO

iii. It is Stream oriented IO

iv. It is Channel based IO

i & iv

i & ii

ii & iii

i & iii

Which of the following is TRUE about the access modifier "protected"?

accessible within the child class only

accessible inside the same class only

accessible inside the same package only

accessible within the same package and within child class in other packages

class A {

static void myFun() {

System.out.println("Hello");

}

}

class B extends A {

static void myFun() {

System.out.println("Friends");

}

}

class MyProgram {

public static void main(String args[]) {

A obj = new B();

obj.myFun();

}

}

Hello

Hello Friends

Friends

Compilation error

First Question (Regular Expression):

Which of the following does not match or is invalid for the given regular expression String "[0-5][6-9]?\d{3}"?

i. 57898

ii. 67898

iii. 08898

iv. 56898

i & ii

Only ii

i & iv

Only i

finalize() method is used in

Exiting a program

exception handling

object formation

garbage collection

readLine() is the method of which class

BufferedInputStream

BufferedReader

Scanner

File

Which of the following is not a method of iterator

nextElement()

hasNext()

next()

remove()

Which of the following is NOT an example of Marker interface

Remote

Cloneable

Serializable

Comparable

class Student {

int roll;

String name;

}

class Demo {

public static void main(String args[]) {

Student s1 = new Student();

Student s2 = new Student();

s1.roll = 101;

s1.name = "Peter";

s2.roll = 102;

s2.name = "Thomson";

System.out.println(s1.name + "" + s2.name);

}

}

Peter Thomson

Compilation error

Runtime error

null null

public class Test {

public static void main(String[] args) {

int i = 256;

byte b = (byte) i;

System.out.println(b);

}

}

4

2

0

256

What is byte code in Java

Code generated by JVM

Block of code written inside a class

Name of Java source code file

Code generated by Java compiler

Which of the following is FALSE about the constructor

A class can have more than one constructor

Constructor name and class name are same

A class can not have more than one constructor

Constructor does not have a return type

Which of the following statements are TRUE about the 'final' keyword

i. final methods can not be overridden in the derived class

ii. final variables can be initialized only in the declared class

iii. final classes can be inherited

iv. final classes can not be inherited

i & iv

ii & iii

i & iii

ii & iv

Default implementation of toString() method of Object class returns

DefaultClassName@HashCode

HashCode@ClassName

ClassName@PlusHashCode

HashCode only

ClassName only

class StringDemo {

public static void main(String args[]) {

String str1 = "Hello";

String str2 = "Hello";

String str3 = new String("Hello");

}

}

Now answer which of the following statements will return true:

i. str1 == str2

ii. str1 == str3

iii. str1.equals(str3)

Only i

i and iii

i and ii

ii and iii

Which of the following is not a method of Thread class

start()

wait()

join()

sleep()

Which of the following are FALSE:

i. object of abstract class can not be created

ii. abstract class must have at least one abstract method

iii. abstract class can have no abstract method

iv. abstract class can not be inherited

ii & iv

i & iii

i & ii

i & iv

Method overriding is an example of \_\_\_\_\_\_\_\_\_\_\_

static polymorphism

static and dynamic polymorphism both

dynamic polymorphism

overloading

class A {

class B {

void callInner() {

System.out.println("callInner invoked");

}

}

}

Considering the following code snippet, which of the given statements is CORRECT to create an inner class object?

B bobj = new A().new B();

A.B bobj = new A.B();

A.B bobj = new A().new B();

B bobj = new new B();

Which of the following statements are TRUE?

i. static method can access only static members

ii. static method can access both static and non-static members

iii. non-static method can not access static members

iv. non-static method can access both static and non-static members

i and iv

ii and iv

i and iii

i and ii

Which of the following statements are FALSE about HashMap?

i. It does not maintain the insertion order of the elements

ii. It can be accessed using index

iii. It can contain duplicate keys

iv. It can contain duplicate values

Only ii

ii & iii

i & iii

i & iv

Java

interface TaskInterface {

int doTask(int val);

}

Consider the following functional interface and answer which of the given statements is NOT CORRECT?

TaskInterface t = val -> val \* 2;

TaskInterface t1 = (val) -> return val \* 2;

TaskInterface t2 = (val) -> { return val \* 2; };

TaskInterface t3 = (int val) -> { return val \* 2; };

class MyException extends Exception {

}

class MainClass {

static void sayHello() throws MyException {

System.out.println("hello friends");

}

public static void main(String args[]) {

try {

sayHello();

} catch (MyException e) {

// Exception is thrown but not handled

}

}

}

sayHello

Runtime error

Compilation error

hello friends

class Demo {

int a = 10;

Demo(int a) {

this.a = a;

}

void fun() {

a = a \* 2;

System.out.println(a);

}

}

class TestG {

public static void main(String args[]) {

Demo d = new Demo(5);

d.fun();

}

}

20

10

0

compilation error

class First {

void fun() {

System.out.println("Hello");

anotherFun();

}

void anotherFun() {

System.out.println("Gentleman");

}

}

class Second extends First {

void anotherFun() {

System.out.println("Friends");

}

}

class MyProgram {

public static void main(String args[]) {

First f = new Second();

f.fun();

}

}

Possible Outputs:

Hello Gentleman

Compilation error

Runtime error

Hello Friends

class MyThread extends Thread {

public MyThread(String threadName) {

super(threadName);

System.out.println("Inside " + threadName + " constructor");

}

public void run() {

System.out.println(Thread.currentThread().getName() + " - started");

}

}

class ThreadDemo {

public static void main(String args[]) throws InterruptedException {

MyThread mt1 = new MyThread("Thread1");

MyThread mt2 = new MyThread("Thread2");

mt1.start();

mt2.start();

mt1.join();

mt2.join();

}

}

Thread1 started

Thread2 started

Can not decide the thread execution order

Thread2 started

Thread1 started

Compilation error

class A {

void fun() {

System.out.println("fun of A");

}

}

class B extends A {

@Override

void fun() {

System.out.println("fun of B");

}

}

class RunProg {

public static void main(String args[]) {

A aobj = new A();

B bobj = new B();

aobj.fun();

bobj.fun();

aobj = bobj;

aobj.fun();

}

}

Possible Outputs:

fun of A

runtime error

compilation error

fun of B

What is the purpose of a ByteArrayInputStream in Java?

Ans. To read an array of input data in bytes

Which of the following is a wrong method signature in the context of an interface?

Ans. public final int add(int a, int b);

How many interfaces can be implemented in a class?

Ans. As many as you need

Java compiler "javac", reads the Java source code and translates into \_\_\_\_\_\_\_\_\_\_\_

Ans. Byte code

Which of the following does NOT override the equals() and hashCode() methods?

Ans. java.lang.StringBuffer

Which of the following is true about ListIterator and Iterator?

ListIterator can traverse lists in both directions

Iterator can do operations like modifying the items it holds.

ListIterator does not extend the Iterator interface

Iterator can add elements during traversal of the list.

which of the following is used to prevent the class from begin inherited?

final

static

super

abstract

What is encapsulation in Java?

It is the process of hiding data

It is the process binding variables and methods into a single unit

It is the process of providing static methods

To support reusability in Java

Which of the following is the proper way of having static import in Java?

import static java.lang.Math.PI.\*;

static import java.lang.Math.PI.\*;

static import java.lang.Math.PI;

import static java.lang.Math.PI;

Which of the following keyword is used to define a default method in an interface?

static

final

abstract

default

Which is NOT true about Polymorphism in Java?

Return type must not change

Type of arguments must not change

Number of arguments must not change

Method name must not change

How an interface Animal can inherit another interface Sound

interface Animal extends Sound

class Animal extends Sound

class Animal implements Sound

interface Animal implements Sound

Which of the followings are FALSE:

i. object of abstract class can not be created

ii. abstract class must have at least one abstract method

iii. abstract class can have no abstract method

iv. abstract class can not be inherited

i & ii

ii & iv

i & iii

iii & iv

Which of the following is wrong in the context of Abstract class in Java?

Given

abstract interface Vehicle {

public void start(int arg);

}

class Car implements Vehicle {

public abstract void start(String arg);

}

abstract class Car implements Vehicle {

}

abstract class Car implements Vehicle {

public void start(int arg) {}

}

abstract class Car implements Vehicle {

public abstract void start(String arg);

}

public class Worker {

static int x = 10;

void process(int x) {

x++;

System.out.println(x);

}

public static void main(String[] args) {

new Worker().process(x);

System.out.println(x);

}

}

**Output:**

Ans. 11 10

**Which of the following class is the super-class of the Exception class?**

Ans. Throwable

**What guarantees type-safety in a collection?**

Ans. Generics

public static void main(String[] args) {

int temp = 50;

if (temp == 20 && temp / 0 == 25) {

System.out.println("YES");

} else {

System.out.println("NO");

}

}

Output:

Ans. Exceptions is thrown at Runtime

Which of the following statement is wrong?

final interface Demo

final class Demo

static class Demo

abstract class Demo

Which of the following Map implementation preserves the insertion order?

TreeMap

HashMap

LinkedHashMap

WeakHashMap

public static void main(String[] args) {

int result = 0;

try {

int x = 100 / 0;

result++;

} catch (ArithmeticException e) {

result++;

} catch (Exception e) {

result++;

} finally {

result++;

}

System.out.println(result);

}

Compilation error

1

2

0

How many bits are required to store a long value in Java?

48

16

64

32

String s1 = "Java";

String s2 = new String("Java");

String s3 = s2;

boolean a = (s1 == s2);

boolean b = (s1.equals(s3));

boolean c = (s2 == s3);

System.out.println(a + "" + b + "" + c);

**Output:**

Ans. false true true

**What is the purpose of the super keyword in Java?**

Ans. To call super class constructor

Which of the following Collection stores the objects in a sorted order?

LinkedHashSet

HashSet

TreeSet

ArrayList

public static void main(String[] args) {

int x = 65;

String str = x < 60 ? "Hello" : x > 75 ? "Java" : "Hello Java";

System.out.println(str);

}

**Output:**

Ans. Hello Java

**Which class is the root of all classes in Java?**

Class

Object

String

Root

public static void main(String[] args) {

int value = 20;

switch (value) {

case 10:

System.out.println(10);

break;

case 20:

System.out.println(20);

case 30:

System.out.println(30);

default:

System.out.println("No output");

}

}

Output:

20

30

No output

final int COUNT = 10;

COUNT++;

System.out.println(COUNT);

**Output:**

Compilation fails

How to get the number of elements in the array?

length

size()

length()

size

Which of the following keyword marks the instance variable NOT to be serialized in Serialization process?

ignore

default

transient

auto

Which of the following is NOT an valid array declaration?

int a[][] = new int[10][10];

int [][]a = new int [10][10];

int []a = new int[10];

int [][]a = new int[][10];

Which of the following streams is used to write and read data between two threads?

Piped

Pushback

Data

Object

The compareTo(int x, int y) method from the Comparator interface compares two int values. What will be the return value when x is greater than y?

0

1

-1

2

class MyThread extends Thread {

@Override

public void run() {

System.out.println("WOW!");

}

}

public class Thread1 {

public static void main(String[] args) {

MyThread t = new MyThread();

t.start();

t.run();

}

}

**Output:**

WOW!

WOW!

Which class can create a thread – safe String object?

ImmutableString

StringBuilder

String

StringBuffer

class Runner implements Runnable {

@Override

public void run() {

System.out.println("Runner Thread is running");

}

}

public class Final1 {

public static void main(String[] args) {

Thread t1 = new Thread(new Runner());

t1.start();

t1.start();

}

}

Output:

Runner Thread is running

RuntimeException

import java.util.HashSet;

import java.util.Set;

public class Test {

public static void main(String[] args) {

Set<Integer> set = new HashSet<>();

for (int i = 1; i <= 10; i++) {

for (int j = 1; j <= i; j++) {

set.add(i);

}

}

System.out.println(set.size());

}

}

Output:

10

Which method puts the current thread on wait until the thread on which it is called is dead?

join()

start()

sleep()

wait()

public static void main(String[] args) {

try {

String s = null;

System.out.println(s.length());

} catch (Exception e) {

System.out.println("Exception is thrown");

} catch (NullPointerException e) {

System.out.println("NullPointerException is thrown");

}

}

Output:

NullPointerException is thrown

**Q1: State true or false.**

i. Public can only be assigned to class - **false** (can be members of classes, interfaces) ii. Protected can be accessed within the same package - **true** iii. Protected method is never accessible outside the package - **false** (accessible in subclasses in other packages) iv. Friendly variable may be accessible outside class - **true** (accessible within the same package)

**A** i-false, ii-true, iii-false, iv-true

**Q2: The output of the below Java program?**

abstract class Bell {

// No abstract methods

}

class DoorBell extends Bell {

DoorBell() {

System.out.println("DoorBell ringing..");

}

}

public class AbstractClassTesting2 {

public static void main(String[] args) {

Bell bell = new DoorBell();

}

}

The main method creates an instance of DoorBell. The constructor of DoorBell is called, which prints "DoorBell ringing..".

output

DoorBell ringing..

Q3: What will be the output of the below Java program if input given by the user is 'qwerty'?

import java.io.BufferedReader;

import java.io.IOException;

import java.io.InputStreamReader;

class test {

public static void main(String[] args) throws IOException {

char c;

BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));

do {

c = (char) obj.read();

System.out.print(c);

} while (c != 'q');

}

}

Ans. q

Q4: The \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ classes are abstract classes that support reading and writing of byte streams.

Ans. InputStream, OutputStream

Q5: Out of these methods of the String class, which one can be used for testing the strings for equality?

Ans. equals()

Which of the following class is thread safe?

Ans. Hashtable

Annotation type definition looks similar to which of the following?

Ans. Interface

What is an Unchecked Exception in Java?

Ans. An exception that need not be handled

Which of the following is a correct implementation of method overloading?

Ans. void methodA() {}

void methodA(int a) {}

**Q 10: The concept of multiple inheritance is implemented in Java by**

Ans. extending one class and implementing one or more interfaces

**Q 11: When an expression consists of int, double, long, float, then the entire expression will get promoted into a data type that is:**

Ans. Double

**Q 12: Which of the following is not a benefit of using Java generics?**

Ans. More efficient code execution

**How many times does the following code segment execute?**

Java

int x=1, y=10, z=1;

do {

y = x++;

y -= 2;

z++;

} while (y > 1 && z < 10);

**Which are keywords in Java?**

Ans. Synchronized

**Because finalize() belongs to the java.lang.Object class, it is present in all \_\_\_\_\_\_\_\_\_\_\_**

Ans. Objects

**Q 16: Which of the following is not correct?**

**A** int [][] arrValues = new int [][20];

**Q 17: When does Overloading not occur?**

**D** When more than a single method have the same name, the same number and types of parameters, and yet different signatures.

**Q 18: How do you forcefully invoke the Garbage Collector in Java?**

**C** System.gc();

String s1 = "abc";

String s2 = "def";

String s3 = s1.concat(s2.toUpperCase());

System.out.println(s1 + s2 + s3);

**Output:**

abcdefABCDEF

**Which of the following statements correctly describes an interface?**

It's a pure abstract class

**Which of the following ways is the correct way to create an object in Java?**

Using the new keyword

**Identify the true statements about finalization.**

* A class may have more than one finalize method
* Finalizers are mostly used with simple classes
* A class may have only one finalize method
* Finalizer overloading is allowed

**Choose the correct one about thread:**

* when JVM exists the main method, it will stop only after all the threads include daemon threads are stopped.
* programmer has to write a special program for garbage collection in multiple threads.
* if there are multiple threads, reading or writing of data of class is inconsistent.
* The threads from one class ends at the same time

**Which of the following are Java reserved words?**

* constant
* implement
* import
* run

Q 25: In Java variables, if first increment of the variable takes place and then the assignment occurs. This operation is also called

A Post decrement

B Increment/decrement

C Pre Increment

D Post Increment

Q 26: Which of the following are true?

A. The InputStream and OutputStream classes are byte-oriented.

B. The ObjectInputStream and ObjectOutputStream do not support serialized object input and output.

C. The Reader and Writer classes are character-oriented.

D. The Reader and Writer classes are the preferred solution to serialized object output.

A A & D

B B & C

C B & D

D A & C

Q 27: How many times "Hello World" is printed?

public class MainClass {

public static void main(String[] args) {

for(int i = 0; i < 5; i++); {

System.out.println("Hello World");

}

}

}

A 0

B 2

C 4

D 5

Q 28: All java classes are derived from

A Java.util.Date

B Java.util.Class

C Java.lang.Class

D Java.lang.Object

Q 29: The correct sequence of execution of a Java program is?

A Editing -> Bytecode Verifier -> Compilation -> Execution->

B Editing -> Bytecode Verifier -> Compilation -> Class Loader -> Execution

C Editing -> Compilation -> Bytecode Verifier -> Class Loader -> Execution

D Editing -> Compilation -> Class Loader -> Bytecode Verifier -> Execution

Q 30: Which is a valid literal for an integer?

A 1 00 000

B 1\_00\_000

C 1,00,000

D 1\_00\_000

Q 31: Fill in the blanks: It is possible to extend an \_\_\_\_\_\_\_\_\_\_\_, but not an \_\_\_\_\_\_\_\_\_\_\_

A abstract class, enum

B abstract class, interface

C enum, interface

D interface, abstract class

Q 32: Inner classes cannot declare \_\_\_\_\_\_\_\_\_\_\_ variables.

A Static

B Final

C Transient

D Protected

Q 33: Which interface of the java.util package offers the specified behaviour?

Entries are organised as key/value pairs.

Duplicate entries replace old values.

A Map

B List

C Set

D Sets

Q 34: Choose the correct option based on below java program

import java.util.\*;

class test {

public static void main(String[] args) {

List<Integer> intList = new ArrayList<>();

intList.add(10);

intList.add(20);

System.out.println("The list is: " + intList);

}

}

A runtime exception

B compiler time error

C The list is: [10, 20]

D The list is: [0, 0]

Q 35: If a variable is declared final, it must include \_\_\_\_\_\_\_\_\_\_\_ value.

A integer

B float

C initial

D no

Q 36: What is the error in the following code?

class Test {

abstract void display();

}

A Test class should be declared abstract

B No error

C Test class should be declared public

D Method display() should be declared as static

Q 37: Which of the following statements are true?

A. The String class is implemented as a char array, elements are addressed using the stringname[] convention 1

B. Strings are a primitive type in Java that overloads the + operator for concatenation

C. Strings are a primitive type in Java and the StringBuffer is used as the matching wrapper type

D. The size of a string can be retrieved using the length property. 2

A A & D

B B & C

C B & D

D A & B

Q 38: Which of the following is not a wrapper class?

A String

B Integer

C Double

D Character

Q 39: Which of the following statements accurately describe the use of access modifiers within a class definition?

A They can be applied to both data & methods

B They 1 can be applied only on methods

C They must be applied to data variables first and then to methods.

D They can follow a class's data variables or methods

public class test {

public static void main(String arg[]) {

int ary[] = new int[2];

ary[0] = 5;

try {

int number = 2 / 0;

} catch (Exception e) {

System.out.println("Divide by Zero");

} finally {

System.out.println("Inside FINALLY block");

}

}

}

A Divide by Zero

Inside FINALLY block

B Compiler error

C Inside FINALLY block

D No output

LINUX and cloud

Which of the following is the correct statement about cloud computing?

All of the options

Cloud computing is nothing more than the Internet

The use of the word "cloud" makes reference to the two essential concepts

Cloud computing abstracts systems by pooling and sharing resources

Which of the following are true characteristics of SaaS service model?

SaaS applications are cost-effective since they do not require any maintenance at the end user side.

They can be scaled up or down on demand.

The software applications are maintained by the vendor.

All of the options.

What is the core of the Linux operating system called?

Kernel

Vi Editor

Command Line

Terminal

Which of the following is an example of the cloud?

Cisco WebEx

Dropbox

All of the options

Amazon Web Services (AWS)

Which of the following is the Virtual machine conversion cloud?

None of the options

AbiCloud

Amazon CloudWatch

BMC Cloud Computing Initiative

The \_\_\_\_\_\_\_ is something that you can obtain under contract from your vendor.

All of the options

PoS

QoS

SoS

The command used to runs the shell built-in command 'command' with the given argument?

there is no command present for this purpose

caller

none of the options

builtin

Which vi editor command copies the current line of the file?

none of the options

yw

yy

yc

In which of the following service models the hardware is virtualized in the cloud?

CaaS

PaaS

NaaS

IaaS

What are edge locations in AWS?

All of the options

The edge location is an isolated logical data center in a region

The edge locations are the end-points for AWS, used to deliver fast content to users.

The edge location is a geographical area or collection of data centers.

Linux is which kind of Operating System?

Multi User

All of the options

Multi Tasking

Multi Processes

Which of the following is a type of cloud computing service?

Service-as-a-Software (SaaS)

Software-as-a-Service (SaaS)

Software-as-a-Server (SaaS)

Software-and-a-Server (SaaS)

What is true about GIT?

Git is an example of distributed version control systems

Used for handling the development of small and large projects

All of the options

Git is open-source

Which statement resumes the next iteration of a for, while, select, or untill loop?

command

break

complete

continue

The Linux command used to count the total number of lines, words, and characters contained in a file is

wecount

count

countw

wc

The command used to display the name of operating system is

unix

kernel

os

uname

What is Cloud Computing?

None of the options

Cloud Computing means providing services like storage, servers, database, networking, etc

Cloud Computing means storing data in a database

Cloud Computing is a tool used to create an application

Which of the following lets you sort, aggregate, display, and format report information based on the data in your application?

Presentation Builder

Report Builder

Business Objects Build

Dashboard Designer

The 'mapfile' command

none of the options

reads lines of standard error file

reads lines of standard input and assigns each to the element of an indexed array

reads lines of standard output file

After running this program, as you press 's', what will be the output of the program? 1 #!/bin/bash 2 echo"press 's' to print 3 read -n 1 read var 4 if $[Svar=="s"] 5 then 6 echo "Sans" 7 else 8 echo "You did not press 9 fi 10 exit

You did not press s

None of the options

Program will generate an error message

Sans

Which of the following type of virtualization is also characteristic of cloud computing?

Application

Storage

CPU

All of the options

Which of the following is not a type of cloud server?

Private Cloud Servers

Dedicated Cloud Servers

Public Cloud Servers

Merged Cloud Servers

The command "umask -S"

sets the mask to 000

sets the mask to 777

prints the current mask using symbolic notation

prints the current mask using octal numbers

In open source software:

The GPL only prohibits unmodified software from being commercially repackaged

The GPL allows anybody to modify the software and release it commercially

The GPL ensures that all subsequent versions of a software remains open source

The GPL allows software that is modified to be released as closed source software

Git can be used for which project?

.Net project

All of the options

File version management

Java enterprise project

When the system is booted the first thing loaded in memory is

Shell

Commands

Kernel

Script

Which of the following technologies are used in Longjump's PaaS?

All of the options

SOAP

REST

Java

**Q 1** Which distribution is usually used as a prior for the distributions involving a parameter related to the average rate of occurrence of a certain event?

**A** Gamma distribution

**B** Beta distribution

**C** Normal distribution

**D** Poisson distribution

**RESPONSE** A

**Q 2** The median and mode of the numbers 15, 11, 9, 5, 15, 13, 17 are respectively:

**A** 13, 6

**B** 13, 15

**C** 15, 16

**D** 13, 18

**RESPONSE** A

**Q 3** Which of the following distributions are used for discrete Random Variables?

**A** Poisson Distribution

**B** Uniform Distribution

**C** Gaussian Distribution

**D** Gamma Distribution

**From image\_c46244.png:**

Which command creates a copy of an existing git repository.

git replace

git copy

git move

git clone

Which of the following can be considered PaaS offering?

YouTube

Google Earth

Google Maps

Google Adsense

Which type of PaaS includes on-demand scaling and application security?

Add-on development facilities

Application delivery-only environments

Stand-alone development environments

Open platform as a service

The command used to creates an empty file if file does not exist is

read

touch

ed

cat

initrd is a file

Contains root-file system and drivers required to be preloaded during bootup

Contains only scripts to be executed during bootup

None of the options

Containing root file-system required during bootup

Who founded Linux Kernel?

Ken Thompson and Dennis Ritchie

Richard Stallman

Linus Torvalds

Linus Torvalds and Ken Thompson

What is the function of bind command in bash shell?

defining new macros

dumping the installed key bindings

all of the options

defining new key bindings for existing commands

SaaS applications are?

not customizable

reliable

Non reliable

customizable

Which of the following network resources can be load balanced?

Connections through intelligent switches

All of the options

DNS

Storage resources

Which of the following benefit is related to creates resources that are pooled together in a system that supports multi-tenant usage?

On-demand self-service

Broad network access

All of the options

Resource pooling

Which one of the following statement is not true?

vi stands for visual editor

vi editor has two modes of operation: command mode and insert mode

vi editor commands are not case sensitive

vim editor is the improved version of vi editor

What is true about PaaS?

PaaS tool is a fully integrated development environment.

PaaS systems support standards such as HTML, JavaScript, or other rich media technologies.

All of the options

PaaS offers the runtime environment for applications.

An application that provides for transaction overflow in a reservation system is an example of \_\_\_\_\_\_\_\_\_\_.

cloud servicing

cloud bursting

cloud provisioning

all of the options

PML

Which of the following is not true in context to model stacking

* Stacked models doesn't associate the predictions from all the base models into a new dataset.
* Model stacking reduces the chance of overfitting by combining predictions from the base models having distinct sources of error.
* Model stacking is an ensemble learning method in which a meta-model is built to make predictions based on the outputs of the individual models.
* The unique capabilities of the base models determine how well model stacking works.

In the given image, among the given hyper planes (A, B, C), which one can serve as maximum-margin hyperplane in SVM classification

[Image showing a scatter plot with two classes of points (stars and circles) and three hyperplanes (A, B, C)]

* Hyperplane A
* Hyperplane C
* None of the options
* Hyperplane B

Do the given image correctly unfolds RNN cell?

[Image: A diagram showing an RNN cell on the left and its unfolded version over time on the right. The unfolded version shows multiple identical cells connected sequentially, with inputs xt−1​,xt​,xt+1​ and outputs ht−1​,ht​,ht+1​]

* Image Incomplete
* Yes
* No
* Ambiguous image

Which variant of RNN can be used for Sentiment Analysis

[Image 1: A sequence of green boxes (representing hidden states) connected from left to right, with blue input boxes feeding into each green box and red output boxes coming out of each green box.]

[Image 2: A single blue input box feeding into a single green box, which then produces a single red output box.]

[Image 3: Multiple blue input boxes feeding into a sequence of green boxes connected from left to right, with red output boxes coming out of each green box. There are also arrows indicating connections between green boxes in both forward and backward directions (bidirectional).]

[Image 4: Multiple blue input boxes feeding into a sequence of green boxes connected from left to right, with only a single red output box at the very end of the sequence.]

In boosting algorithms, those models are combined which have error rate

* One
* Greater than 0.5
* Zero
* Less than 0.5

Which of following is true

1. GRUs utilize update gates and reset gates to control the flow of information through the network
2. LSTM prevents vanishing gradient issue of classical RNN
3. To create the candidate activation, the update gate in GRU, decides how much historical data should be mixed with the present input.
4. The candidate activation and the update gate are used to update the concealed state. It displays the GRU's output for each time step.

* Statement (ii) only
* All of the options
* Statement (i) & (ii) only
* Statement (i), (ii) & (iii)

Give the number of clusters in the following dendrogram at height 0.5

[Image: A dendrogram with a y-axis labeled 'Height' ranging from 0 to 2.0. A horizontal line is drawn across the dendrogram at Height = 0.5.]

* 5
* 2
* 3
* 4

Receiver Operating Characteristic (ROC) curve plot is generated by plotting

* False Positive Rate along Y-axis and False Negative Rate along X-axis
* True Positive Rate along Y-axis and False Negative Rate along X-axis
* True Positive Rate along Y-axis and False Positive Rate along X-axis
* True Positive Rate along X-axis and False Positive Rate along Y-axis

In the following statement: keras.layers.Conv2D(32, (3, 3), activation='relu', input\_shape=(32, 32, 3)) Determine (i) Size of data instances (images) given to the CNN (ii) Size of kernel

* 32,3x3
* 32x32x3, 3x3
* 32x32, 3x3
* None of the options

State True or False: Scaling of features is necessary for the k-NN

* Ambiguous statement
* False
* True
* Statement Incomplete

Which of following ROC curve signifies better classification accuracy

[Image: A plot showing four ROC curves (Class A, Class B, Class C, and a line with 45-degree slope representing random guess). Class A curve is closest to the top-left corner, followed by Class B, then Class C, and finally the random guess line.]

* Class A ROC Curve
* Class B ROC Curve
* Class C ROC Curve
* Line with 45degree slope

Which of the following is not a Image Data Augmentation technique?

* Time Stretching
* Random Flips
* Random Cropping
* Random Rotations
* Query successful

The purpose of application of Bagging is

* To decrease the value of Bias
* To decrease the variance
* To increase the value of Bias
* To increase the variance

A student is given question paper, upon seeing the question paper student performs the task of grouping the questions into easy, intermediate and difficult categories. Which type of machine learning technique will be employed if the same task is to be done by machine learning program?

* None of the options
* Supervised Learning
* Semi supervised Learning
* Unsupervised Learning

A simple ANN consists of 10 neurons in the input layer, 20 neurons in the first hidden layer and three neurons in the output layer. What is the size of weight matrices between input layer to first hidden layer and first hidden layer to output layer

* [10 x 20], [20 x 3]
* [20 x 10], [3 x 20]
* [10 x 20], [3x20]
* [10 x 10], [3 x 3]

In a ground, the object detection system detects 150 hurdles, out of which 100 are actual hurdles. What is the precision of the employed object detection system.

* Precision=75%
* Precision = 45.33%
* Precision =66.66%
* Precision= 25%

Identify the correct order of steps for gradient descent algorithm

1. Difference between the actual value and the predicted value is calculated.
2. Iterations are repeated until the optimal values of network weights is achieved.
3. Utilizes the network to send an input and retrieves values from the output layer.
4. Visit each neuron that adds to the error and adjust its value accordingly to lower the error.
5. Weight and bias values are initialized with random values.

* 5, 3, 1, 4, 2
* 5, 4, 3, 2, 1
* 1, 2, 3, 4, 5
* 4, 3, 1, 5, 2

Ridge regression technique uses \_\_\_\_\_\_ while Lasso regression utilizes \_\_\_\_\_\_ in order to mitigate overfitting issue.

* L1 regularization, L2 regularization
* Combination of L2 & L1 regularization, L2 regularization
* Combination of L2 & L1 regularization, L1 regularization
* L2 regularization, L1 regularization

Which model has internal memory out of the following?

* Convolutional Neural Networks (ConvNets)
* Recurrent Neural Network
* AutoEncoders
* Capsule Neural Networks (CapsNets)

What limitation/ limitations one has to keep in mind while applying K-means clustering limitation?

* Unable to converge to a local minimum in the case when there is poor selection of the initial centroids.
* All of the options
* Struggles with categorical data
* Sensitive to missing data

Which is following is not true for autoencoders (i) The number of neurons in bottleneck layer decides how much the data can be compressed. (ii) Autoencoders when working with image data, generally utilizes MSE Loss and L1 Loss functions. (iii) As the depth of autoencoders decreases, the model complexity decreases and processing becomes faster. (iv) Encoding stage of encoder is a set of upsampling and convolutional blocks that reconstructs the bottleneck's output.

* Statement (iv) only
* Statement (iii) only
* Statement (ii) only
* Statement (i) only

Apply Naive Bayes classifier on the given data set

[Table showing 'Name/Characteristic', 'Yellow Color', 'Sweet Fragrance', and 'Total'. Row 1: Marigold, 350, 450, 650 Row 2: Rose, 400, 300, 400 Row 3: Total, 750, 750, 1050]

Predict the given vegetable with yellow color and sweet Fragrance characteristics

* None of the option
* Can't estimate
* Rose
* Marigold

Which of the following statements in context to Apriori Algorithm

Statement (S1): Apriori algorithm takes a bottom-up iterative approach to find the frequent item sets Statement (S2): Apriori algorithm determine the support of itemsets in the transactional database, and select the minimum support and confidence.

* Both S1 & S2 are True
* Both S1 & S2 are False
* S1 is False and S2 is True
* S1 is True and S2 is False

In context to data anomalies, fill in the blanks: A temperature dataset, there was one reading showing recording of temperature -97°C at night in Ladakh region indicate \_\_\_\_\_\_ while in a student dataset, score of a student who usually scores very high marks has the entry of very less score indicate\_\_\_\_\_.

* Point Anomaly, Context Anomaly
* Context Anomaly, Point Anomaly
* Point Anomaly, Collective Anomaly
* Collective Anomaly, Context Anomaly

Which of the following activation functions cannot be used to classify a given image at the output layer?

* Tanh
* ReLU
* If-else rule
* Sigmoid

A recommendation system employs a technique X, which utilizes the data from other users' actions and their preferences, to forecast a user's interests or preferences. Identify X:

* Content based filtering
* Item-Based Collaborative Filtering
* None of the options
* User-Based Collaborative Filtering

Rise in the prices of flowers before festive season is an example

* Cyclic Trend
* None of the options
* Irregular Trend
* Seasonal Trend

State True or False Statement: The moving average method highlights longer-term trends or cycles in the data while mitigating short-term variations.

* False
* Statement Incomplete, no information can be drawn.
* True
* None of options

What can you say about the model prediction accuracy from the given ROC curve

[Image: A ROC curve plot with a yellow line that forms a perfect semi-circle, where the Area Under the Curve (AUC) = 0.5. The x-axis is labeled "Threshold".]

* The ability of the model to discriminate between positive and negative classes is hundred percent accurate
* The ability of the model to discriminate between positive and negative classes is absent.
* None of the options
* A negative class is predicted by the model to be a positive class, and vice versa.

Name the step of YOLO technique that is applied on the below image

[Image: Two images of a dog. In both images, a green bounding box is drawn around the dog. In the second image, there are multiple overlapping green bounding boxes around the dog.]

* None of options
* Grid Division
* Class Prediction
* Non-Maximum Suppression

Exploding gradients can arise in Deep Neural Network due to

* Activation Function
* Small values of the gradients
* Weight values
* None of the options

Which of following is not true for Mean Reciprocal Rank (MPR)

* MPR is frequently used to assess how effective recommendation systems is
* Lower MRR value indicates a better-performing recommendation or retrieval system.
* The average of the reciprocal ranks of the first pertinent item in each list is used to compute the MRR.
* MRR is especially important when the order of recommendations is important.

For object recognition, which decision tree learning technique can be utilized?

* Quadratic Discriminant Analysis
* Naive Bayes Classifier
* Linear Discriminant Analysis
* Random Forest

Which of the following techniques can be employed to reduce the effect of F2 and F3 on G1 and G2

[Image: A scatter plot with four clusters of data points. G1 and G2 are large, dense clusters. F2 and F3 are much smaller, sparser clusters of outlier points.]

* All of the options
* Data Truncation
* Imputation
* Trimming

Which of the following is true in context of K-fold cross-validation technique (i) It reduced the risk of overfitting (ii) It involves dividing the dataset into K subgroups (iii) Of K subgroups, k-1 subgroups are used for training while the left-over group is used for validation

* Statement (i) only
* Statement (i) & (ii) only
* Statement (ii) & (iii) only
* All of the options

X wants to classify the points of the image given below. Which of the following variant of SVM will be best suited for the classification task

[Image: A scatter plot showing two classes of points (purple and yellow) arranged in concentric circles, where the yellow points form the inner circle and the purple points form the outer circle. The classes are not linearly separable.]

* Kernel SVM
* One-Class SVM
* Online SVM
* Linear SVM
* Query successful

In ANN, the application of back propagation learning algorithm may generate

* To find Global Optimal Solution
* To find local optimal solution]
* To find local optimal solution which might be global optimal solution
* To find a local optimal solution which is never a global optimal solution

Which of the following technique can't be applied for feature extraction and dimension reduction to the data set having dimensions 20X1000 (20 instances and 1000 features per instance)?

* Principal Component Analysis (PCA)
* Linear Discriminant Analysis (LDA)
* Random forest
* Autoencoders

State True or False for the given statement Statement (S): If a classifier is trained on small training set, then it will not overfit.

* Ambiguous statement
* Statement Incomplete
* True
* False

Identify X1, X2, X3, X4 in the given Venn Diagram

[Image: A Venn diagram showing four concentric circles. The outermost circle is X1, then X2, then X3, and the innermost circle is X4.]

* Machine Learning, Artificial Intelligence, Generative AI, Deep Learning
* Generative AI, Artificial Intelligence, Machine Learning, Deep Learning
* Artificial Intelligence, Machine Learning, Deep Learning, Generative AI
* Artificial Intelligence, Machine Learning, Generative AI, Deep Learning