--Question Starting--
3. Match the following C++ programming concepts with their correct analytical implications:
1. Overloading A. Allows multiple functions with the same name but different parameters, facilitating compile-time polymorphism.
2. Virtual Functions B. Enables dynamic dispatch, ensuring the correct function is called based on object type during runtime.
3. Templates C. Supports generic programming, allowing functions and classes to operate with generic types.
4. Exception Handling D. Provides a mechanism to handle runtime anomalies, maintaining program flow integrity.
Choose the correct answer from the options given below:
(1) 1-C, 2-B, 3-A, 4-D
(2) 1-A, 2-C, 3-B, 4-D
(3) 1-D, 2-A, 3-C, 4-B
(4) 1-B, 2-D, 3-A, 4-C
Answer Key: 4
Solution:
? Overloading: It allows multiple functions with the same name but different parameter lists, facilitating compile-time resolution of function calls, thus enabling polymorphism at compile time.
? Virtual Functions: They are designed to support runtime polymorphism; by enabling dynamic dispatch, they ensure the correct function implementation is invoked based on the actual object type during execution.
? Templates: They serve as a foundation for generic programming, allowing classes and functions to operate with any data type, thus promoting code reuse and flexibility.
? Exception Handling: It provides a structured mechanism to detect, propagate, and manage runtime errors, thus ensuring the program can handle anomalies gracefully without abrupt termination.
Hence, Option (4) is the right answer.

--Question Starting--
4. Match the following NoSQL concepts with their corresponding features:
1. Indexing and Ordering Data Sets A. Optimizes query retrieval by indexing specific data fields for faster access.
2. Query Optimization B. Techniques to improve the efficiency of data retrieval and manipulation queries.
3. NOSQL in Cloud C. Deploying NoSQL databases over cloud infrastructure for scalability and accessibility.
4. Different NOSQL Products D. Variations like document, key-value, column-family, graph databases catering to diverse data models.
Choose the correct answer from the options given below:
(1) 1-B, 2-A, 3-C, 4-D
(2) 1-A, 2-B, 3-D, 4-C
(3) 1-D, 2-C, 3-A, 4-B
(4) 1-C, 2-D, 3-B, 4-A
Answer Key: 4
Solution:
? Indexing and Ordering Data Sets: By creating indexes on specific data fields, queries can be executed more efficiently, reducing search space and access time.
? Query Optimization: It involves techniques like query rewriting, indexing, and caching to enhance retrieval speed and resource utilization.
? NOSQL in Cloud: Deploying NoSQL databases on cloud platforms offers scalability, high availability, and elasticity, aligning with modern distributed architectures.
? Different NOSQL Products: They include various types like document stores (MongoDB), key-value stores (Redis), column-family stores (Cassandra), and graph databases (Neo4j), each suited for specific data and query patterns.

Hence, Option (4) is the right answer.