

--Question Starting--

Match the following syntax analysis techniques with their underlying parsing strategies and key features:

1. Syntax Analysis Characteristic

I. Recursive Descent Parsing A. Predictive parsing method utilizing lookahead tokens, primarily LL(1)

II. LL(1) Parsing B. Top-down parser that uses recursive procedures for each non-terminal

III. LR Parsing C. Bottom-up approach that constructs parse trees by shifting and reducing

IV. LR Parser D. Uses a parsing table to handle more complex grammars with shift-reduce actions

Choose the correct answer from the options given below:

(1) I-A, II-B, III-C, IV-D

(2) I-B, II-A, III-D, IV-C

(3) I-C, II-D, III-A, IV-B

(4) I-B, II-C, III-D, IV-A

Answer Key: 4

Solution:

? Recursive Descent Parsing: A top-down approach where each non-terminal is implemented as a procedure, matching with characteristic II-B.

? LL(1) Parsing: A predictive top-down parser that uses a lookahead of one token, aligning with characteristic I-A.

? LR Parsing: A bottom-up parser that builds the parse tree by reducing from the leaves upward, matching characteristic III-C.

? LR Parser: Implements shift-reduce parsing with a parsing table for handling complex grammars, corresponding to characteristic IV-D.

Hence, Option (4) is the right answer.

--Question Starting--

3. Match the following characteristics of big data systems with their correct components or concepts:

1. Big Data Characteristics Component/Concept

I. Volume A. Distributed File System optimized for large-scale data

II. Variety B. MapReduce framework for processing diverse data types

III. Velocity C. Data stored in HDFS with high throughput

IV. Veracity D. Ensuring data accuracy and trustworthiness in large datasets

Choose the correct answer from the options given below:

(1) I-D, II-C, III-B, IV-A

(2) I-C, II-B, III-D, IV-A

(3) I-B, II-D, III-A, IV-C

(4) I-A, II-C, III-B, IV-D

Answer Key: 2

Solution:

? Volume refers to the large amount of data stored, which is managed effectively using distributed systems like HDFS, aligning with characteristic I-C.

? Variety pertains to different data types, which MapReduce can process, matching characteristic II-B.

? Velocity relates to the speed at which data is generated and processed, associated with high throughput systems like HDFS, aligning with characteristic III-D.

? Veracity deals with data quality and trustworthiness, corresponding to ensuring data accuracy, matching characteristic IV-A.

Hence, Option (2) is the right answer.