--Question Starting--
Match the following data communication components with their correct roles in a data transmission system:
1. Components of Data Communication System Characteristics
I. Modulator A. Converts digital signals into analog for transmission
II. Encoder B. Converts data into a form suitable for transmission
III. Transceiver C. Combines transmitter and receiver functions into a single device
IV. Demodulator D. Converts received analog signals back into digital data
Choose the correct answer from the options given below:
(1) I-B, II-A, III-C, IV-D
(2) I-A, II-B, III-D, IV-C
(3) I-C, II-D, III-A, IV-B
(4) I-D, II-C, III-B, IV-A
Answer Key: 2
Solution:
? Modulator: Converts digital data into analog signals for transmission over analog channels.
? Encoder: Transforms data into a suitable format, often involving encoding techniques for error detection or correction.
? Transceiver: A device that transmits and receives data, integrating both functions, typically used in communication links.
? Demodulator: Converts received analog signals back into digital data, completing the modulation-demodulation process.
Hence, Option (2) is the right answer.

--Question Starting--
2. Match the following NLP processing techniques with their primary functions:
Natural Language Processing Technique Function
I. Parsing A. Assigns semantic meaning to syntactic structures
II. Semantic Analysis B. Analyzes the grammatical structure of a sentence
III. Pragmatics C. Determines the intended meaning in context
IV. Tokenization D. Breaks text into meaningful units like words or tokens
Choose the correct answer from the options given below:
(1) I-B, II-A, III-C, IV-D
(2) I-A, II-B, III-D, IV-C
(3) I-C, II-D, III-A, IV-B
(4) I-D, II-C, III-B, IV-A
Answer Key: 2
Solution:
? Parsing: Analyzes the grammatical structure of sentences, identifying syntactic relations.
? Semantic Analysis: Assigns meaning to syntactic structures, interpreting semantics.
? Pragmatics: Looks beyond syntax and semantics to understand contextual or implied meanings.
? Tokenization: Segments text into tokens, the basic units for further linguistic processing.
Hence, Option (2) is the right answer.

--Question Starting--
3. Match the following C programming constructs with their respective functionalities:
C Programming Concepts Functionality
I. Array Initialization A. Allocates memory dynamically during runtime
II. Pointer Arithmetic B. Accesses elements via address computations
III. Structure Declaration C. Groups different data types under a single name
IV. File Handling D. Reads or writes data to external files
Choose the correct answer from the options given below:
(1) I-B, II-A, III-C, IV-D
(2) I-C, II-D, III-A, IV-B

(3) I-A, II-B, III-D, IV-C
(4) I-D, II-C, III-B, IV-A
Answer Key: 1
Solution:
? Array Initialization: Sets initial values for array elements at declaration.
? Pointer Arithmetic: Performs computations on pointers to access array elements efficiently.
? Structure Declaration: Defines a new data type that groups various data fields.
? File Handling: Involves reading from or writing to files using fopen, fread, fwrite, fclose, etc.
Hence, Option (1) is the right answer.