BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2025)

CLASS: BTECH **SEMESTER : IV**
BRANCH: BT/ECE/EEE/CE/FT/PIE/ME **SESSION : SP/2025**

SUBJECT: CS261 FUNDAMENTAL OF DATA STRUCTURE

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

Q.1(a)	Explain big O notation.	[2]
Q.1(b)	Write an algorithm to compute factorial of a number and find its time complexity.	[3]
Q.2(a)	Explain an array.	[2]
Q.2(b)	Write a program to search for a number in an array of 10 integers.	[3]
Q.3(a)	Write a list of operations that are carried out on stack.	[2]
Q.3(b)	Write the algorithm for push operation in a stack	[3]
Q.4(a)	Explain a queue and list its properties.	[2]
Q.4(b)	Write the algorithm for enqueue in a queue.	[3]
Q.5(a)	Write the properties of a stack.	[2]
Q.5(b)	Write the advantages of a queue data structure.	[3]

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