Assignment-1
Set-I (For Roll Number 01 to 12)
COURSE CODE: CSE205
COURSE TITLE: DATA STRUCTURES AND ALGORITHMS

Max. Marks: 30

Read the following instructions carefully before attempting the Assignment.
1) Explanations must be in your words, do not copy from any resources.
2) Solutions must be unique for each student.
*3) You have to submit pdf through UMS containing **Questions and Solutions** of your given set for Assignment.*
4) Example will be more focused during evaluation.
5) File name should be in this format: Section_Rollno_ Name_SetNumber _RegNo. Example: GE_03_Aman_Q2_12342

Q1Sort the given elements using selection sort 12, 92, 11, 16, 12, 44, 9. Demonstrate all steps . **Step wise output and final output should be mentioned in a box form.**What is the need of measuring the complexity of an algorithm? Explain the time complexity of insertion sort [15 Marks]
Q2: Write an algorithm for insert an element into k^{th} index of a linear array having n elements. Apply same algorithm on a linear array having 10 elements and write the explanation for each step. (Where k<=n-1) [15 Marks]

Assignment-1
Set-II (For Roll Number 12 to 24)
COURSE CODE: CSE205
COURSE TITLE: DATA STRUCTURES AND ALGORITHMS

Max. Marks: 30

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2) Solutions must be unique for each student.
*3) You have to submit pdf through UMS containing **Questions and Solutions** of your given set for Assignment.*
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Q1: What is asymptotic notation? Explain the entire notation by taking example for each notation of your own choice. [15 Marks]
Q2: Given arrays A and B are:

A: 1, 8, 20, 34, 67
B: 1, 2, 3, 4

Write an algorithm such that we get a final array C as follows:

C: 1, 1, 2, 3, 4, 8, 20, 34, 67

Apply same algorithm on given arrays A and B to get C and write the explanation for each step. [15 Marks]

Assignment-1
Set-III (For Roll Number 25 to 36)
COURSE CODE: CSE205
COURSE TITLE: DATA STRUCTURES AND ALGORITHMS

Max. Marks: 30

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2) Solutions must be unique for each student.
*3) You have to submit pdf through UMS containing **Questions and Solutions** of your given set for Assignment.*
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Q1: Sort the given elements using insertion sort 12, 92, 11, 16, 12, 44, 19. Demonstrate all steps . **Step wise output and final output should be mentioned in a box form.**What is the need of measuring the complexity of an algorithm? Explain the time complexity of insertion sort. [15 Marks]
Q2: Write an algorithm of binary search? Explain with the help of suitable example. Give explanation about the best and worst case complexity of binary search. [15 Marks]

Assignment-1
Set-IV (For Roll Number 34 to 48)
COURSE CODE: CSE205
COURSE TITLE: DATA STRUCTURES AND ALGORITHMS
Max. Marks: 30

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2) Solutions must be unique for each student.
3) You have to submit pdf through UMS containing ***Questions and Solutions*** *of your given set for Assignment.*
4) Example will be more focused during evaluation.
5) File name should be in this format: Section_Rollno_ Name_SetNumber _RegNo. Example: GE_03_Aman_Q2_12342

Q1: What do you mean by time-space trade-off among algorithms? Sort the given elements using bubble sort. Demonstrate all steps. 12, 92, 11, 16, 12, 44, 19 . **Step wise output and final output should be mentioned in a box form.** [15 Marks]
Q2: Write an algorithm for insert an element into k^{th} position of a linear array having n elements. Apply same algorithm on a linear array having 10 elements and write the explanation for each step. (Where k<=n) [15 Marks]

Assignment-1
Set-V (For Roll Number 49 to 60)
COURSE CODE: CSE205
COURSE TITLE: DATA STRUCTURES AND ALGORITHMS
Max. Marks: 30

Read the following instructions carefully before attempting the Assignment.
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2) Solutions must be unique for each student.
3) You have to submit pdf through UMS containing ***Questions and Solutions*** *of your given set for Assignment.*
4) Example will be more focused during evaluation.
5) File name should be in this format: Section_Rollno_ Name_SetNumber _RegNo. Example: GE_03_Aman_Q2_12342

Q1: Sort the given elements using selection sort 12, 92, 11, 16, 12, 44, 19. Demonstrate all steps. **Step wise output and final output should be mentioned in a box form.** What is algorithm complexity and explain algorithm complexity for selection sort? [15 Marks]
Q2: Write an algorithm to delete an element from k^{th} position of a linear array having n elements. Apply same algorithm on a linear array having 10 elements and write the explanation for each step. (Where k<=n) [15 Marks]

Set-VI (For Roll Number 61 to 72)
COURSE CODE: CSE205
COURSE TITLE: DATA STRUCTURES AND ALGORITHMS

Max. Marks: 30

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2) Solutions must be unique for each student.
3) You have to submit pdf through UMS containing ***Questions and Solutions*** *of your given set for Assignment.*
4) Example will be more focused during evaluation.
5) File name should be in this format: Section_Rollno_ Name_SetNumber _RegNo. Example: GE_03_Aman_Q2_12342

Q1: Sort the given elements using Bubble sort 12, 92, 11, 16, 12, 44, 9. Demonstrate all steps . **Step wise output and final output should be mentioned in a box form.**What is the need of measuring the complexity of an algorithm? Explain the time complexity of insertion sort

Q2: Write an algorithm to delete an element from k^{th} index of a linear array having n elements. Apply same algorithm on a linear array having 10 elements and write the explanation for each step. (Where k<=n-1) [15 Marks]