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| **Question No** |  | **Question** | **Marks** |
| **1** | **a** | Explain Stack and Heap memory. | **5** |
| **b** | Why do we need dynamic memory allocation? Explain with examples. | **5+5** |
| **c** | How to create a dynamic array? What are the benefits of it? | **5+10** |
| **2** | **a** | How does class and object work? How to declare an object? | **5+5** |
| **b** | What is a constructor and why do we need this? How to create a constructor show with an example. | **10+5** |
| **c** | Create a class named **Person** where the class will have properties name(string), height(float) and age(int). Make a constructor and create a dynamic object of that class and finally pass proper values using the constructor. | **15** |
| **3** | **a** | What is the size that an object allocates to the memory? | **5** |
| **b** | Can you return a static object from a function? If yes, show with an example. | **10** |
| **c** | Why do we need -> (arrow sign)? | **5** |
| **d** | Create two objects of the **Person** class from question **2-c** and initialize them with proper value. Now compare whose age is greater, and print his/her name. | **10** |

1.A->

Ans:

Stack Memory:

Stack memory is a region of memory that is used for organizing function calls and local variables in a program. It operates in a "last in, first out" (LIFO) manner, meaning that the last item pushed onto the stack is the first one to be removed. The stack is managed by the compiler or the runtime environment of a programming language.

Heap Memory:

Heap memory, also known as the dynamic memory, is a region of memory used for dynamic memory allocation. It is called "dynamic" because memory can be allocated and deallocated at runtime as needed. Unlike the stack, the heap does not have a specific order or pattern for allocating or deallocating memory.

Objects created with the ‘new’ operator in languages C++.