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| **Question No** |  | **Question** |
| **1** | **a** | Explain Stack and Heap memory.  Answer: |
| **b** | Why do we need dynamic memory allocation? Explain with examples. |
| **c** | How to create a dynamic array? What are the benefits of it? |
| **2** | **a** | How does class and object work? How to declare an object?  Ans:  Class is a blue design. Which shows the structure and behavior of an object, like if we think of a car then that car has various behaviors like the number of wheels, how many cc of the engine, how many seats, etc. These are the components of the car blueprint. Based on this, various other types of objects are created.  Object declare:  Object Name Ashik  This is object line in code :      Person \*Ashik = new Person("Ashik",5.11,22);  This is full code.  #include<bits/stdc++.h>  using namespace std;  class Person  {      public:      char name[100];      float height;      int age;          Person(char \*n,float h,int a)          {              strcpy(name,n);              height=h;              age=a;          }  };  int main()  {        Person \*Ashik = new Person("Ashik",5.11,22);      cout<<(\*Ashik).name<<endl;      cout<<(\*Ashik).height<<endl;      cout<<(\*Ashik).age<<endl;      return 0;  } |
| **b** | What is a constructor and why do we need this? How to create a constructor show with an example.  Answer:  Constructor is a special method of c++. It is used in class functions. When we create an object, the constructor automatically calls the object. We use constructors when we need to repeatedly use the name, address, date, age, etc. on different objects.  Example:  #include<bits/stdc++.h>  #include<string.h>  using namespace std;  class Ticket  {      public:      char Passenger\_name[100];      int ticket\_number;      int ticket\_price;          Ticket(char\* pn,int tn,int tp)          {              strcpy(Passenger\_name,pn);              ticket\_number = tn;              ticket\_price = tp;          }  };  int main()  {      Ticket Ashik("Ashik Ahammed",01,250);      cout<<Ashik.Passenger\_name<<endl;      cout<<Ashik.ticket\_number<<endl;      cout<<Ashik.ticket\_price<<endl;      return 0;  } |
| **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.  Answer:  #include<bits/stdc++.h>  using namespace std;  class Person  {      public:      char name[100];      float height;      int age;          Person(char \*n,float h,int a)          {              strcpy(name,n);              height=h;              age=a;          }  };  int main()  {        Person \*Ashik = new Person("Ashik",5.11,22);      cout<<(\*Ashik).name<<endl;      cout<<(\*Ashik).height<<endl;      cout<<(\*Ashik).age<<endl;      return 0;  } |
| **3** | **a** | What is the size that an object allocates to the memory? |
| **b** | Can you return a static object from a function? If yes, show with an example. |
| **c** | Why do we need -> (arrow sign)? |
| **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. |