		Class 12	
		lesson - 2	
	Que 4	Short answer type questions	
	4.1	What is special about the array of char?	

	Answer	A character array (char array) is a collection of the variables of "char" datatype. It is used to store string in C language. It can be a one-dimensional array or a two-dimensional array. It is also called "null terminated string". A Character array is a sequence of the characters that are stored in consecutive memory addresses.
		
		Example:
		
		char name[13] = "StudyTonight"; // valid character array initialization
		
		char name[1O] = {'L','e','s','s','o','n','s','\O'}; // valid initialization	

	4.2	What is string?	

	Answer	Strings are defined as an array of characters. The difference between a character array and a string is that the string is terminated with a special character '\0' also known as null character .
		Example:
		char str_name[size];
		In the above syntax str_name is any name given to the string variable and size is used to define the length of the string it means, the number of characters that strings will store. It is to be noted that there is an extra terminating character which is the Null character ('\O') used to indicate termination of string which differs strings from normal character arrays (Array Char).
		
		// C program to illustrate strings
		
		#include<stdio.h>
		#include<string.h>
		void main()
		{
		        // declare and initialize string	

		char str_name[]="School";
		
		// print string
		printf("%s",str_name);
		
		}
		
		Output: School

4.3		What is the purpose of the null character?
Answer		A null character (\0) is used to mark the end of a character string.C language doesn't have explicit (basic) "string data type". This requires to use some character to terminate the character arrays so the same could be treated as strings.But character arrays may or may not contain NULL terminator. Character arrays which contain terminating NULL Character (\0) are strings. Example: char season[] = {'a','u','t','u','m'}; /* character array */ char country[] = {'l','n','d','i','a','\0'}; /* character string */
4.4		Give the declaration for a string called student, which holds up to 50 characters. Show two ways to initialize the string in the declaration?
Answer		char student[50]="School"; char student[50]={'S', 'c','h','o','o','l','\0'};
4.5		What is the limitation on array of char?
Answer		This minimum limit was raised in the 1999 update to the C standard to be at least 65,535 bytes.
5		Answer the questions?
5.1		Can we use scanf() to read a strings? If no, then give reason. Why it is wrong to use the & symbol when reading in a string with scanf()?
Answer		scanf stands for "scan formatted" and there's precious little less formatted than user-entered data hence scanf does not read whitespace and data after it. If scanf will encounter whitespace then it will ignore anything written after it therefore it is less preferred to read/scan string. Reason-1: '&' is used to get the address of the variable. C does not have a string type, String is just an array of characters and an array variable stores the address of the first index location. Reason-2: By default the variable itself points to the base address and therefore to access base address of string, there is no need of adding an extra '&'.

	5.2	What is stored in the str, if each of the following values, separately, is read in using a single call to scanf()? char str[10]; (a) cityscape (b) New Delhi (c) one or more blanks	

	Answer	(a) cityscape
		
		 (b) New
		
		 (c) one
		
		 Program used for it:
		 #include<stdio.h>
		 main()
		 {
		 char str[1O];
		 printf("Enter words:");
		 scanf("%s", str);
		 printf("%s", str);
		 }	

	5.3	What is a difference between "A" and 'A'?	

	Answer	'A' represents a character and "A" represents string.
		 In other words:
		 'A' - Means a character 1 byte (8 bits) long containing A.
		 "A" - Means a string which is 2 bytes (16 bits) long which holds an A and a NULL character (\0).
		
		 Example:
		 int num='A'; //Valid, assigns 65 to num
		 char test=65; //Valid, as test will be 'A' after this
		  printf("%c, %d",'A','A'); // Output will be A, 65
		 printf("%c","A"); ///WRONG
		  printf("%s","A"); //Valid	

	5.4	Give the difference between putchar() and puts()?	
	Answer	putchar() are single character functions. puts() are string functions. Header files for these above functions : <stdio.h> putchar() – prints a character to the screen. Example: putchar(b); The statement prints the given character on the screen at the current cursor position. So, it will display a character b on the screen.	

		puts() – writes a string on the screen and advances the cursor to the newline. i.e. it ends with a new line character.
		Example:
		puts("one");
		puts("two");
		The above code will print "one" and "two" in separate lines because the first puts() will print "one" and place the cursor at the new line.
		Output:
		one
		two
		
		the second puts()will print "two" appears on this line and again the cursor is advanced to newline and any subsequent output will appear on the next line.	

	5.5	List the various functions that be used to perform the I/O of the stringdata?	
	Answer	Input Functions: scanf() This function is used to get one word as input from user. It ignores rest of the string when encounters white space. gets() This function is used to read/scan whole string including white spaces. getchar() This function is used to scan/read only one character. OutPut Functions: putchar() are single character functions. puts() are string functions. putchar() – prints a character to the screen.	

	5.6	Find the output of the following after correcting the program?
		#include "stdio.h"
		#include "string.h"
		main()
		{
		char str[8O]="I like c";
		strcpy(str, "hello");
		printf(str);
		}	

	Answer	#include<stdio.h> #include<string.h> void main() {	

		char str[80]="I like C";
		
		strcpy(str, "hello");
		
		printf("%s",str);
		
		}
		hello	

	5.7	What would be the value of X after the execution of the following?
		int x, y=10;
		
		char z='a';
		
		x=y+z;	

	Answer	107	