1. What are the limitations of using getchar and scanf functions for reading strings.

2. Compare the working of the following functions:
a)strcpy and strncpy
b)strcat and strncat
c)strcmp and strncmp

3. Why does strcmp return a number that's less than, equal to ,greater than zero ?Also does the exact return value have any significance?

4. What will be the value of the string str after the following statements have been executed.

```
#include<stdio.h>
int main()
{
char str[30];
strcpy(str,"tire-bouchon");
strcpy(&str[4],"d-or-wi");
strcat(str,"red?");
printf("%s",str);
}
```

5. Write a program which will read a string and rewrite it in the alphabetic order. For example the word STRING should be written as GINRST.

6. Write a program , which reads your name from the keyboard and outputs a list of ASCII codes ,which represent your name.

7. Fill in the blanks
a) We can use conversion specification _____ in scanf to read a line of text.
b) The _____ function is used to determine the length of a string.
c)The _____ string manipulation function determines if a character is contained in a string.

8. What is the output of C program with strings?

```
int main()
{
char str1[]="JOHN";
char str2[20];
str2= str1;
printf("%s",str2);
return 0;
}
```

9. What will be the value of the string s1 after the following statements have been executed.

```
#include<stdio.h>
int main()
{
char s1[30],s2[30];
strcpy(s1,"computer");
strcpy(s2,"science");
if(strcmp(s1,s2)<0)
strcat(s1,s2);
else
strcat(s2,s1);
s1[strlen(s1)-6]='\0';
printf("%s",s1);
}
```

10. What does the following program print?

```
#include<stdio.h>
int main()
{
char s[]="Hsjodi",*p;
for(p=s;*p;p++)
```

```
--*p;
puts(s);
}
```

1. What is dynamic memory allocation? Explain different dynamic memory allocation/de-allocation functions of C with syntax and example.
2. malloc() function used in dynamic allocation is available in which header file?
3. Distinguish between malloc and calloc()
4. What are the different errors that can occur in DMA?

5. Write a program in C to find the largest element in an array using Dynamic Memory Allocation.

6. C program to create memory for int, char and float variable at run time.

7. C program to input and print text using Dynamic Memory Allocation.

8. C program to read a one dimensional array, print sum of all elements along with inputted array elements using Dynamic Memory Allocation.

9. C program to read and print the student details using structure and Dynamic Memory Allocation.

10. C program to read and print the N student details using structure and Dynamic Memory Allocation.

1. What is structure? Explain the C syntax of structure declaration with example.
2. Explain Nested structure with example.
3. What do you mean by structure members?
4. What is the difference between structure variable declaration and initialization?
5. Write a C program to store and print name, SRN, subject and FSA marks of students using structure.
6. Explain the difference between array and structures.
7. Explain with example how to use typedef for structures.
8. Write a program that takes two inputs from the user: a distance in miles and a distance in kms. Use the concept of structures and function to find the difference in miles.
9. How to copy and compare structure variables? Illustrate with example.
10. Why strcpy() should be used to modify the content of structure member if it is a array?
11. Write a program that takes as input two-time instants (let say: t1(h1,m1,s1) and t2(h2,m2,s2) where h, m and s are hours, minutes and seconds resp.) and finds the difference between them (t1-t2) using the concept of structures.

    INPUT:
    Enter hrs, mins, secs for t1:
    03
    20
    50
    Enter hrs, mins, secs for t2:
    02
    10
    30

    OUTPUT:
    Difference= 1:10:20