1. Find the output of the following C codes:

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| Code | | | Output |
| #include <stdlib.h>  atof( st) 🡪 convert string to double  atoi(st ) 🡪 convert string to integer  atol(st ) 🡪 convert string to long int  strtod( st , d) 🡪 converts a piece of a string to a double | | | |
| double x;  int y;  x=**atof("22.6");**  printf(" The value of x = %lf \n", x);  y=**atoi("5");**  printf(" The value of y = %d \n", y); | | |  |
| char \*st=" 19.5 is your grade";  char \*str;  double x;    **x=strtod(st, &str);**    printf(" The value of st= %s \n", **st**);  printf(" The value of str= %s \n", **str**);  printf(" The value of x= %lf \n", **x**); | | |  |
| #include <string.h>  **strcpy( st1,st2)** 🡪 copy array st2 into array st1  **strncpy( st1,st2,n)** 🡪 copy n characters of array st2 into array st1  **strcat( st1,st2)** 🡪 adds the characters of string **st2** to the end of string **st1**  **strncat( st1,st2,n)** 🡪 adds the first n characters of string **st1** to the end of string **st2** | | | |
| char s1[]=" My name is sara";  char s2[20];  **strcpy(s2,s1);**  printf(" The value of s1= %s \n", s1);  printf(" The value of s2= %s \n", s2); | | |  |
| char s1[]=" My name is sara";  char s2[20];  **strncpy(s2,s1,8);**  **s2[8]='\0';**  printf(" The value of s1= %s \n", s1);  printf(" The value of s2= %s \n", s2); | | |  |
| **/\* without adding ‘\0’ to the end of s2\*/**  char s1[]=" My name is sara";  char s2[20];  strncpy(s2,s1,8);  printf(" The value of s1= %s \n", s1);  printf(" The value of s2= %s \n", s2); |  | | |
| char s1[80]=" My name is Ahmed ";  char s2[]= "Salem";  printf("s1= %s\n",s1);  printf("s2= %s\n",s2);  printf("strcat(s1,s2)= %s \n", **strcat(s1,s2)**);    printf("s1= %s\n",s1);  printf("s2= %s\n",s2); | |  | |
| char s1[80]=" My name is Ahmed ";  char s2[]= "Salem";  printf("s1= %s\n",s1);  printf("s2= %s\n",s2);  **strncat(s1,s2,2);**    printf("s1= %s\n",s1);  printf("s2= %s\n",s2); | |  | |

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| Code | Output |
| #include <string.h>  **strcmp( st1,st2)** 🡪 compare string st1 with string st2  if equal returns 0  if st1 grater than st2 return grater than 0  if st1 less than st2 return less than 0  **strncmp( st1,st2)** 🡪 compare up to n characters of string st1 with string st2  if equal returns 0  if st1 grater than st2 return grater than 0  if st1 less than st2 return less than 0  **strchr( st1,ch)** 🡪 searches for the first instance of **ch** in **st1**  **strlen(st) 🡪** returns the length of **st** | |
| char \*s1="Happy new year";  char \*s2="Happy new year";  char \*s3="Happy holiday";  printf("s1= %s\n",s1);  printf("s2= %s\n",s2);  printf("s3= %s\n\n",s3);  printf("strcmp(s1,s2)= %d\n\n", **strcmp(s1,s2)**);  printf("strcmp(s1,s3)= %d\n\n", **strcmp(s1,s3)**);  printf("strcmp(s3,s1)= %d\n\n", **strcmp(s3,s1)**); |  |
| char \*s1="Happy new year";  char \*s2="Happy new year";  char \*s3="Happy holiday";  printf("s1= %s\n",s1);  printf("s2= %s\n",s2);  printf("s3= %s\n\n",s3);  printf("strncmp(s1,s3,6)= %d\n\n",**strncmp(s1,s3,6)**);  printf("strcmp(s1,s3,7)= %d\n\n", **strncmp(s1,s3,7)**);  printf("strcmp(s3,s1,7)= %d\n\n", **strncmp(s3,s1,7)**); |  |
| char \*s1="Happy new year";  char ch1='a';  char ch2='z';  if (strchr(s1,ch1))  printf("The character ' %c ' is found in strring %s\n",ch1,s1);  else  printf("The character ' %c ' is NOT found in strring %s\n",ch1,s1);  if (strchr(s1,ch2))  printf("The character ' %c ' is found in strring %s\n",ch2,s1);  else  printf("The character ' %c ' is NOT found in strring %s\n",ch2,s1); | |
|  | |
| char \*s1="Happy new year";  char \*s2=" HELLO";  int size;  size=strlen(s1);  printf("The number of letters in string s1 (%s) is = %d \n\n",s1,size);  printf("The number of letters in string s2 (%s) is = %d \n\n",s2,strlen(s2)); | |
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1. Find the output of the following C codes:

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| #define STRSIZ 17  int main(){  char f1[STRSIZ] = "Mona ";  char f2[STRSIZ] = "Ali ";  char last[STRSIZ] = "Al-khaldi";  strcat(f1, last);  strncat(f2, last, 7);  printf("f1 = %s \n\n",f1);  printf("f2 = %s \n\n",f2);  printf("last = %s \n\n",last); |
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1. Write a program that accepts words from a user. The process stops when the user enters a predefined sentinel.

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| #include <stdio.h>  #define SENT “END”  Int main(void)  {  char word[15];  printf (“Enter a word\n”);  scanf (“%s”, word);  while (strcmp(word, SENT) != 0)  {  printf (“Enter a word\n”);  scanf (“%s”, word);  //process word….  } |
|  |

**self-check exercises**

Given the following declarations:

char s5[5], s10[10], s20[20];

char aday[7] = “sunday”;

char another[9] = “saturday”;

**What is the output of the following:**

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| **Code** | **Output** |
| strncpy(s5, another, 4);  s5[4] = ‘\0’;  printf("%s\n",s5); |  |
| strcpy (s10, &aday[3]);  printf("%s\n",s10); |  |
| printf("%d\n",strlen(another)); |  |
| printf("%s\n",strcpy (s20, aday) ); |  |
| strcat(s20, another); |  |