SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMKUR-3
Department of Computer Science and Engineering
TUTORIAL – 4: Review of C Concepts

Faculty: Kallinatha H D **Class:** III sem 'A'
Subject: Data Structures **Subject Code: 3**CCI02

Answer the following Questions:

1. What will be the output of the following programs?

a)
```
main( )
{
    int  n[3][3] = {  2, 4, 6,
                      8, 1, 5,
                      3, 2, 7 };
    int   (*p)[3] = n;
    printf("\n%u %u %d",p, *(p+2),*(*(p+1)+2));
}
```

b)
```
main( )
{
    int a = 12,
b = 4;
    int *p1=&a,
*p2=&b, val;
    val = 4* -
*p2/ *p1 + 10;
printf("%d",val);
}
```

c)
```
int f(char *);
main( )
{
(void);
    char str[ ] = "STAR";
    printf("%d",f(str));
}
int f( char *p)
{
view(void)
    char *q = p;
{   printf("Function Pointers!");
    while(*++p)
      ;
display(void (*ff)(void))
    return(p-q);
}
```

d)
```
main( )
{
    void view
    void (*f)(void);
    f = view;
    display(f);
}
void
}
void
{  (*ff)( );
}
```

e)
```
void main( )
{
    int c[ ]={2.8,3.4,4,6.7,5};
    int j,*p=c,*q=c;
*cp="union";
    for(j=0;j<5;j++)
    {
printf("%c",*(char *)vp);
        ++q;
printf("%d",*(int *)vp);
    for(j=0;j<5;j++)
    {
(char *)vp+3);
        printf(" %d ",*p);
```

f)
```
void main( )
{
    void *vp;
    char ch='g',
    int j=20;
    vp=&ch;
printf("    %d    ",*c);
    vp=&j;
                }
    vp=cp;
    printf("%s",
}
```

```
        ++p;
      }
   }
```

g)
```
main( )
  #include<stdlib.h>
   {
      int *maxm(int *,int *);
      int *minm(int *,int *);
      int a = 5, b= 3;
  mptr=(int*)malloc(sizeof(int));
      *minm(&a,&b) = *maxm(&a,&b) + *minm(&a,&b);
      printf("\nMax(%d,%d) = %d",a,b,*maxm(&a,&b));
  (int*)calloc(1,sizeof(int));
      printf("\nMin(%d,%d) = %d", a,b,*minm(&a,&b));
    }

   int  *maxm(int *a ,int *b)
   {
      return(*a>*b?a:b);
    }
  (int*)malloc(4*sizeof(int));
    int  *minm(int *a ,int *b)
  *(a+i) = i*10;
   {
  +);
      return(*a<*b?a:b);
    }
  +s);

  +*s);
```

h)
```
     void main( )
{
      int *mptr,*cptr;


 printf("%d",*mptr);
cptr =

printf("%d",*cptr);
    }
```

i)
```
#include<stdlib.h>
     void main( )
  {    int *a, *s, i;
        s = a =

    for(i=0;i<4;i++)

        printf("%d",*s+

      printf("%d",*s);
        printf("%d",*+

            printf("%d",+

  }
```

j)
```
main( )
 {
     printf("%f ", (float)((int)((float)((int)6.5 / 2 + 3.5)) – 3.5));
 }
```

SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMKUR-3
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TUTORIAL – 5: Review of C Concepts

Faculty: Kallinatha H D **Class:** III sem 'A'
Subject: Data Structures **Subject Code: 3**CCI02

Write C programs for the following using Dynamic Memory Allocation functions:

a) Read a string ***str*** with ***n*** characters and also read characters ***ch*****1** and ***ch*****2**. Replace all occurrences of ***ch*****1** with ***ch*****2**.

b) Read a string ***str*** and a substring ***substr*** with ***m*** and ***n*** characters respectively. Insert the substring ***substr*** at the specified position in the string.

c) Read a string ***str*** with ***n*** characters and two substrings ***s*****1** ***and s*****2** with ***p*** and ***q*** characters respectively. Search for the substring ***s*****1** in the string and replace it with ***s*****2**.

d) Read ***n*** elements into an integer array and find the sum of odd numbers and even numbers.

e) Read two sorted integer arrays of size ***m*** and ***n*** respectively and merge them into separate sorted
array.

f) Read two sorted integer arrays of size ***m*** and ***n*** respectively and find the intersection of two arrays.

****