SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMKUR-3
Department of Computer Science and Engineering
TUTORIAL – 6: Structure, Union and Bitfields

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

Answer the following Questions:

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

a)
```
main( )
{
 struct xyz
 {
     int i;
 };
 struct xyz xyz;
 xyz.i=10;
 printf("%d",xyz.i);
printf("%d",xyz.xyz);
}
```

b)
```
main( )
{
  struct xyz
  {
     int i;
   };
 struct xyz xyz;
  int i=20;
xyz.i=10;

    printf("%d … %d",i,xyz.i);
}
```

c)
```
main( )
   {
  struct xyz
    {
     int xyz;
    };
struct xyz xyz;
   xyz.xyz = 10;
}
```

d)
```
main( )
{
  struct DISP
  {
      char ch[7];
      char *str;
  };
   struct DISP m1={"Tumkur","Mysore"};
   printf("\n%c %c\n",m1.ch[0],*m1.str);
   printf("%s %s\n",m1.ch,m1.str);
}
```

e)
```
void main( )
    {
        struct bitfield
        {
            unsigned a:2;
            unsigned c:6;
            unsigned b:8;
        };
        struct bitfield bit1={3,3,3};
        bit1.a++;
        printf("%d",bit1.a);
    }
```

7)
```
main( )
{
     struct MSG
     {
          int num;
          char msg1[20];
          char msg2[20];
     }m;
      strcpy(m.msg1,"Data structures");
      strcpy(m.msg2,"programming");
      display(m.msg1,m.msg2);
}

display(char *s1,char *s2)
{
```

8)
```
main( )
 {
   struct STR
     {
          char str1[20];
          char str2[20];
     };
     struct STR s1;
 int i;
strcpy(s1.str1,"Data");
 strcpy(s1.str2,"C program");
     i=strcmp(s1.str1,s1.str2);
    printf("i=%d\n",i);
  if(i==0)
       printf("Equal strings");
```

```
        printf("%s\t%s\n",s1,s2);
        printf("%s\b%s\n",s2,s1);
        printf("%s\r%s\n",s1,s2);
    }
```

```
    else
        printf("Strings are not equal");
}
```

e) struct point
{
int x;
int y;
};
struct point origin,*pp;
main( )
{
pp=&origin;
printf("origin is(%d,%d)\n",(*pp).x,(*pp).y);
printf("origin is(%d,%d)",pp->x,pp->y);
}

d. void main( )
{
union a
{
int i;
char ch[2];
};
union a u;
u.ch[0]=2;u.ch[1]=3;
printf("%d %d %d",u.ch[0],u.ch[1],u.i);
}

g) void main( )
{
struct India
{
char c;
float d;
};
struct World
{
int a[3];
char b;
struct India Orissa;
};
struct World st={{1,2,3},'p','q',1.4};
printf("%d %c %c %f",st.a[1], st.b, st.Orissa.c, st.Orissa.d);
}

****