Midterm Sample Problem Set

COP 4338 - Programming III

Java Questions

Schedule the following runnable threads using Java Runtime Scheduling Algorithm (round robin $\tau = 3$).

Thread Index

Thread Index	Becomes Runnable at	Priority	Running Time
0	0	4	10
1	2	5	8
2	3	5	6
3	5	5	4
4	6	10	2

C Questions

1. Write a recursive function that prints an input char string in a reverse order. You can decide on the signature of the function
2. Predict the output of the following questions:

a.

```
#include<stdio.h>
int main()
{
   int n;
   for(n = 7; n!=0; n--)
     printf("n = %d", n--);
   getchar();
   return 0;
}
```

b.

```
# include <stdio.h>
# define scanf  "%s Hello World! "
main()
{
   printf(scanf, scanf);
   getchar();
   return 0;
}
```

c.

```
#include <stdlib.h>
#include <stdio.h>
int main()
{
   int i = 1;
   do
   {
      printf("%d\n", i);
      i++;
      if (i < 15)
        continue;
   } while (0);

   getchar();
   return 0;
}
```

d.

```
char *getString()
{
   char *str = "Nice test for strings";
   return str;
}

int main()
{
   printf("%s", getString());
   getchar();
   return 0;
}
```

e.

```
char *getString()
{
    char str[] = "Will I be printed?";
    return str;
}
int main()
{
    printf("%s", getString());
    getchar();
}
```

f.

```
int main()
{
    static int i=5;
    if(--i){
        main();
        printf("%d ",i);
    }
}
```

g.

```
int main()
{
    static int var = 5;
    printf("%d ",var--);
    if(var)
        main();
}
```

h.

```
# include <stdio.h>
int main()
{
   int i=0;
   for(i=0; i<20; i++)
   {
     switch(i)
     {
       case 0:
         i+=5;
       case 1:
         i+=2;
       case 5:
         i+=5;
       default:
         i+=4;
         break;
     }
     printf("%d  ", i);
   }

   getchar();
   return 0;
}
```

i.

```
#include <stdio.h>
int main()
{
  printf("%d", main);
  getchar();
  return 0;
}
```

j.

```
struct
{
   char *name;
   int (*funcptr)();
}
symtab[] = {
   "func", func,
   "anotherfunc", anotherfunc,
};
int main()
{
    printf("%s",(symtab+1)->name);
    getchar();
    return 0;
}
```

k.

```
#include <stdio.h>
int main()
{
    int i;
    i = 1, 2, 3;
    printf("i = %d\n", i);
    i = (1, 2, 3);
    printf("i  = %d\n", i);
    getchar();
    return 0;
}
```

l.

```
#include <stdio.h>
int main()
{
    int first = 50, second = 60, third;
    third = first /* Will this comment work? */ + second;
    printf("%d /* And this? */ \n", third);

    getchar();
    return 0;
}
```

m.

```
#include‹ stdio.h ›
int main()
{
    struct site
    {
        char name[] = "Hello World!";
        int no_of_pages = 200;
    };
    struct site *ptr;
    printf("%d",ptr->no_of_pages);
    printf("%s",ptr->name);
    getchar();
    return 0;
}
```

n.

```
int main()
{
    char a[2][3][3] = {'m','a','k','e',' ','C',' ',
                       'g','r','e','a','t','!'};
    printf("%s ", **a);
    getchar();
    return 0;
}
```

o.

```
int main()
{
   char str[]= "waita\nminute!!";
   char *ptr1, *ptr2;

   ptr1 = &str[3];
```

```
   ptr2 = str + 5;
   printf("%c", ++*str - --*ptr1 + *ptr2 + 2);
   printf("%s", str);

   getchar();
   return 0;
}
```

p.

```
#include <stdio.h>
int fun(int n)
{
    int i, j, sum = 0;
    for(i = 1;i<=n;i++)
        for(j=i;j<=i;j++)
            sum=sum+j;
    return(sum);
}

int main()
{
    printf("%d", fun(15));
    getchar();
    return 0;
}
```

q.

```
#include <stdio.h>
int main()
{
    int c = 5, no = 1000;
    do {
        no /= c;
    } while(c--);

    printf ("%d\n", no);
    return 0;
}
```

r.

```
int main()
{
    while(1){
        if(printf("%d",printf("%d", 123)))
```

```
            break;
        else
            continue;
    }
    return 0;
}
```

s.

```
int main()
{
    int x,y=2,z,a;
    if ( x = y%2)
         z =2;
    a=2;
    printf("%d %d ",z,x);
    return 0;
}
```

t.

```
#define prod(a,b) a*b
int main()
{
    int x=3,y=4;
    printf("%d",prod(x+2,y-1));
    return 0;
}
```

u.

```
int main()
{
    int a[10];
    printf("%d",*a+1-*a+3);
    return 0;
}
```