PreProcessor

1. what is the output of following program

```
#include <stdio.h>
   #define  ONE    1
   #define  TWO         ONE + ONE
   int main(void)
{
       int i = 2;
       i = i - 2 * TWO;
       printf("%d\n", i);
       return 0;
   }
```

## Answers

1. 1

2. 4

3. 0

4. 3

2. what is the output of following program

```
  #include <stdio.h>
   #define A(x)         #x
   int main(void)
{
       int i = 2;
       char *s = A(i);
       i = -(s[0] == 'i');
       printf("%d",i);
       return 0;
   }
```

## Answers

1. -1

2. 0

3. -2

4. -3

3. What is the output of the following program

```
#include<stdio.h>
 int main()
{
 int *ptr;
 ptr = (int *)calloc(1,sizeof(int));
 if (ptr != 0)
printf("%d\n",*ptr);
 return 0;
 }
```

## Answers

1. A41

2. Garbage Value

3. 0

4. 0xABCD1234

4. What is the output of following program

```
    #include <stdio.h>
   #define  A
   #define  C
   int main(void)
{
       int i =
   #ifdef A
   #ifdef B
       10
   #else
       20
   #endif
   #else
       30
   #endif
       ;
       printf("%d",i);
       return 0;
   }
```

## Answers

1. 10

2. 20

3. 30

5. what is the output of following program

```
#include <stdio.h>
  #define  B
  #define  C
  int main(void) {
      int i =
  #ifdef A
  #ifdef C
      6
  #else
      5
  #endif
  #else
      4
  #endif
      ;
      printf("%d",i);
      return 0;
  }
```

## Answers

1. 5

2. 4

3. 6

4. 0

6. What is the output of the following

```
 #include<stdio.h>
int main(){
int *ptr;
ptr = (int *)malloc(16); /* Assume ptr has address of 1020 */
free(ptr);
printf("%u", ptr);
return 0;
}
```

## Answers

1. 1020

2. 1024

3. random address

4. Garbage Value

7. what is the output of following program

```
 #include <stdio.h>
    #define  ONE    1
    #define  TWO         ONE + ONE
    int main(void)
{
        int i = 2;
        i = i - 2 * TWO;
        printf("%d\n", i);
        return 0;
    }
```

## Answers

1. 1

2. 4

3. 0

4. 3

8. Considering  the malloc() function. Which one of the following sentences is correct?

## Answers

1. The malloc() returns the amount of memory allocated

2. The malloc() allocates the desired amount of memory on the stack

3. The malloc() allocates the desired amount of memory on the heap

4. The allocated memory is only local to the function

9. What is the output of following program

```
 #include<stdio.h>
#define COMP(x) 2*-x
int main(void)
{
   int i = COMP(1-1);
   printf("%d",i);
   return 0;
}
```

## Answers

1. 0

2. -1

3. -3

4. -2

10. In the below program, how many bytes are there for the pointer ptr at the end of program. Assume that program is running

```
#include<stdio.h>
 int main()
  {
   int *ptr;
   ptr = (int*)malloc(sizeof(int)*4);
   ptr = realloc(ptr,sizeof(int)*2);
   return 0;
  }
```

## Answers

1. 8

2. 2

3. 4

4. 16