C-Lab-Sol-Day-13

Q-1 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>


int main() {
    int i = 2;
    if(i = 5) -> 5 will be assigned to i and if(5) will be evaluated to true.
        printf("Hello %d ", i);
    else
        printf("Welcome %d ",i);
    return 0;
}
```

a). Compilation Error.

b). Hello 5

c). Hello 2

d). Welcome 5

answer :- b). Hello 5.

Q-2 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>

int main() {
    char ch = 'a';
    if(ch)
        printf("Hi %d ",ch);
    else
        printf("Hello %d ",ch);
    return 0;
}
```

a). Hi 97.

b). Hi a

c). Hello 97

d). Hello a

answer :- b). Hi a.==Wrong

.Hi 97.==Right

Q-3 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>

int main() {
    char name[] = "java";
    if(name)
        printf("Hello %s ",name);
    else
        printf("Hi %s ",name);
    return 0;
}
```

a). Compile time Error.

b). Hello java

c). Hi java

d). Hello java Hi java

answer :- b). Hello java.

Q-4 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>

int main() {
    int a = 10;
    if(-a > a);
        printf("Hi");
    return 0;
}
```

a). Hi.

b). no output.

c). Compile time Error.

d). 10

answer :- a). Hi.

Q-5 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>
int main() {
    int a = 5, b = 10, c = 15;
    if (a < b && b > c)
        printf("Condition 1\n");
    else if (a + b == c)
        printf("Condition 2\n");
    else if (a > c || b < c)
        printf("Condition 3\n");
```

```
    else
        printf("Condition 4\n");
    return 0;
}
```

a) Condition 1

b) Condition 2

c) Condition 3

d) Condition 4

answer :- c) Condition 3

b)Condition 2==compiler

Explanation:

First condition (a < b && b > c) is false because b > c is false.

Second condition (a + b == c) is true (5 + 10 == 15), so "Condition 2" should be printed, but there is a higher-priority else if that is evaluated next (a > c || b < c).

Since a > c is false but b < c is true, "Condition 3" is printed.

Q-6 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>
int main() {
    int x = 0, y = 10;
    if (x++ && y--) {
        if (y > x)
            printf("Branch 1\n");
        else
            printf("Branch 2\n");
    } else {
        if (x == 1)
            printf("Branch 3\n");
        else
            printf("Branch 4\n");
    }
    return 0;
}
```

a) Branch 1

b) Branch 2

c) Branch 3

d) Branch 4

answer :- c) Branch 3

Explanation:

The condition x++ && y-- is false because x++ evaluates to 0 initially (pre-increment). So, the outer if block is skipped.

In the else block, x becomes 1 after increment, so "Branch 3" is printed.

Q-7 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>
int main() {
    int a = 20, b = 15;
    if (a = b) {
```

```
        if (a > 10)
            printf("Hello ");
        if (b < 20)
            printf("World\n");
        else
            printf("C Language\n");
    } else {
        printf("Programming\n");
    }
    return 0;
}
```

a) Hello World

b) Hello C Language

c) Programming

d) No output

answer :- a) Hello World

Explanation:

---

a = b is an assignment, not a comparison, so a becomes 15 (same as b), making the condition true.

The first if (a > 10) is true, printing "Hello".

The second if (b < 20) is also true, printing "World".

Q-8 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>
int main() {
    int n = 5;
    if (n % 2 == 0)
        if (n % 3 == 0)
            printf("Divisible by 6\n");
        else
            printf("Divisible by 2\n");
    else
        if (n % 3 == 0)
            printf("Divisible by 3\n");
        else
```

```
        printf("Not divisible by 2 or 3\n");
    return 0;
}
```

What will be the output if n = 5?

a) Divisible by 6

b) Divisible by 2

c) Divisible by 3

d) Not divisible by 2 or 3

answer :- D) Not divisible by 2 or 3

Explanation:

---

n % 2 == 0 is false (5 is odd).

The else block is executed, and since n % 3 == 0 is also false, the final output is "Not divisible by 2 or 3".

Q-9 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>
int main() {
    int x = 5;
    if (x > 3)
        if (x < 10)
            if (x == 5)
                printf("Five\n");
            else
                printf("Not Five\n");
        else
            printf("Greater than 10\n");
    else
        printf("Less than 3\n");
    return 0;
}
```

a) Five

b) Not Five

c) Greater than 10

d) Less than 3

answer :- a) Five

Explanation:

---

x > 3 is true.

x < 10 is also true.

x == 5 is true, so "Five" is printed.

Q-10 :-

What will be the output of the following C program Snippet?

```
#include <stdio.h>
int main() {
    int a = 7, b = 14;
    if (a > 5)
        if (b > 10)
            if (a + b > 20)
                printf("Case 1\n");
            else
                printf("Case 2\n");
```

```
        else
            printf("Case 3\n");
    else
        printf("Case 4\n");
    return 0;
}
```

a) Case 1

b) Case 2

c) Case 3

d) Case 4

answer: a) Case 1

Explanation:

---

a > 5 is true.

b > 10 is true.

a + b > 20 is true (7 + 14 = 21), so "Case 1" is printed.

Program-1 :-

Write a C Program to take the hours and minutes as input from the user and show whether it is AM or PM using an if-else statement.

Test-Case-1:

Enter the hours (in 24-hour format): 10

Enter the minutes: 30

The time is 10:30 AM

Test-Case-2:

Enter the hours (in 24-hour format): 19

Enter the minutes: 45

The time is 07:45 PM

Sol:-

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```
// Online C compiler to run C program online
#include <stdio.h>

int main() {
    int am,pm,hr,min,pmhr,amhr;
    printf("Enter the hours(in 24-hour format):");
    scanf("%d",&hr);
    printf("Enter the minutes:");
    scanf("%d",&min);
    if(hr>=1 && hr<=12 )
    {
        printf("%d:%2dAM",hr,min);
    }
    else if(hr>=13 && hr<24)
    {
        pmhr=(hr-12);
        printf("%d:%2dPM",pmhr,min);
    }
    else if(hr==24)
    {
        amhr=hr-12;
        printf("%d:%2dAM",amhr,min);
```

```
    }
else
{
printf("Invalid hours entered");
}

    return 0;
}
```

Program-2 :-

Scenario:

A company offers a bonus to its employees based on their years of service and their performance rating. The criteria are as follows:

If an employee has more than 5 years of service:

If their performance rating is greater than 4, they receive a 20% bonus on their salary.

If their performance rating is between 3 and 4 (inclusive), they receive a 10% bonus.

If their performance rating is below 3, they receive a 5% bonus.

If an employee has 5 years of service or less:

If their performance rating is greater than 4, they receive a 10% bonus.

If their performance rating is 3 or below, they receive no bonus.

Question:

Write a C program that takes the employee's years of service, performance rating, and salary as input and calculates the total bonus amount based on the criteria given above.

Example Input and Output:

Test-Case 1:

Enter the years of service: 6

Enter the performance rating (1-5): 4.5

Enter the salary: 50000

Output:

Bonus: 10000

Total Salary: 60000

Test-Case 2:

Enter the years of service: 3

Enter the performance rating (1-5): 3

Enter the salary: 45000

Output:

Bonus: 0

Total Salary: 45000

Sol:-

____

```
// Online C compiler to run C program online
#include <stdio.h>

int main() {
    int ser,ts;
```

```
float perrat,sal,bonus;
printf("Enter the years of services:");
scanf("%d",&ser);
printf("Enter the performance rating(1-5):");
scanf("%f",&perrat);
printf("Enter the salary:");
scanf("%f",&sal);
if(ser>5)
{
   if(perrat<3)
   {
     bonus=5*sal/100;
     printf("Bonus:%.2f\n",bonus);
     ts=sal+bonus;
     printf("Total Salary:%d\n",ts);
   }
   else if(perrat>=3 && perrat<=4)
   {
      bonus=10*sal/100;
      printf("Bonus:%.2f\n",bonus);
      ts=sal+bonus;
      printf("Total Salary:%d\n",ts);
```

```
    }
    else
    {
       bonus=20*sal/100;
        printf("Bonus:%.2f\n",bonus);
        ts=sal+bonus;
        printf("Total Salary:%d\n",ts);
    }
}
else
{
    if(perrat>=0 && perrat<=3)
    {
        bonus=0;
        printf("Bonus:%.2f\n",bonus);
        ts=sal+bonus;
        printf("Total Salary:%d\n",ts);
    }
    else if(perrat>4)
    {
        bonus=10*sal/100;
        printf("Bonus:%.2f\n",bonus);
```

```
            ts=sal+bonus;
            printf("Total Salary:%d\n",ts);
        }
    }

    return 0;
}
```