DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

TASK PLAN

Course Code / Course Name: 10211CS306/ COMPETITIVE CODING-1

Year / Semester : 2024-25 / SUMMER

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Class Slot : L13

Task2: Conceptual Questions in Programming

Aim: To Execute the code based on Conceptual Questions.

1. **What will be the output of the following program?**

```
#include<stdio.h>
int main()
    {
func(); func
return 0;
    }
void func()
    {
auto int i =0;
register int j =0;
static int k =0;
i++ ;j++ ; k++ ;
printf( "%d %d %d\n" , i, j k);
    }
```

Error: function not define properly

2. What will be the output of the following program?

```
#include<stdio.h>
int x = 10;
int main()
    {
int x = 20;
    {
int x =30;
printf( "%d\n", x);
    }
    printf( "%d\n", x); return 0;
    }
```

OUTPUT:

```
30
20
```

3. What will be the output of the following program?

```
#include<stdio.h>
int i =0;
void main(); int
main()
    {
printf("main's i = %d\n", i);
i++;
val();
printf("main's i = %d\n",i);
val();
return 0;
    }
void val()
{ i=100;
printf ( "val's i = %d\n");
i++;
    }
```

Error:

Use keyword int main either void main

4. What will be the output of the following program?

```
#include<stdio.h>
float circle(int); int
main()
    {
float area ;
int radius = 1 ;
area = circle ( radius ) ;
printf ( "\n%f", area ) ;
return 0;
    }
float circle(int r)
    {
float a;
a = 3.14*r*r;
return a;
    }
```

OUTPUT:

3.140000

5. What will be the output of the following program?

```
#include <stdio.h>
void display();
int main
    {
printf("Learn C\n");
display();
return 0;
    }
void display()
    {
printf("Followed by C++, C# and Java\n");
main();
    }
```

Error: implicit declaration of function 'main'

6. What will be the output of the following program?

```
#include<stdio.h>
int main()
    {
float a = 5, b = 2;
int c;
c = a % b;
printf("%d", c);
return 0;
    }
```

Error: invalid operands to binary %

7. What will be the output of the following program?

```
#include<stdio.h>
int main()
    {
int i = 2, j = 3, k, l ;
float a, b ;
k = i / j * j ;
l = j / i * i ;
a = i / j * j ;
b = j / i * i ;
printf( "%d %d %f %f", k, l, a, b ) ;
return 0;
    }
```

OUTPUT: 0 2 0.000000 2.000000

8. What will be the output of the following program?

```
#include<conio.h>
char p[] = "The sixth sick sheikh's sixth ship is
sick"; int main()
    {
int i = 0;
while (p[i] != '\0')
    {
putch(p[i]);
i++;
} return 0;
    }
```

Error: putch function is not define

9. What will be the output of the following program?

```
#include<stdio.h>
int main()
    {

printf("%d %d %d\n", sizeof('3'), sizeof("3"), sizeof(3));
return 0;
    }
```

Output:4 2 4

10. What will be the output of the following program?

```
#include<stdio.h>
int main()
    {
char str1[] = { 'H', 'e', 'l', 'l', 'o' };
char str2[] = "Hello";
printf("\n%s", str1);
printf("\n%s", str2);
return 0;
    }
```

OUTPUT:

HelloHello
Hello

Result: The Program is Executed and Verified Successfully.

Task 3 : Solve programming problems by implementing necessary control statements

a).Raj and Raju are thick friends. They decided to play a game . Raju is an excellent guy with good communication skills. Raj decided to test his friend raju with few tounge twisters. Raj will utter some sentence to his friend. Upon listening to Raj now raju needs to write those sentences told by his friend.Then raj will utter a word. The task is replace all the words that has been uttered by raj in the sentence with a special character #. Kindly help raju and raj to complete their game. Refer sample input and output for more details

Aim: To Solve programming problems by implementing necessary control statements Algorithm:

Step 1:-Start.
Step 2:-Take integer variable X.
Step 3:- Divide the variable X with (X-1 to 2).
Step 4:- If A is divisible by any value (X-1 to 2)
it is not prime.Step 5:-Print result .

PROGRAM:

```
#include <stdio.h>
#include <string.h>

int main() {
    char
    sentence[100];
    char replace_char;
    printf("Enter a sentence: ");
    fgets(sentence, 100, stdin);
    printf("Enter a character to
    replace: "); scanf("%c",
    &replace_char);

    for (int i = 0; i < strlen(sentence);
      i++) { if (sentence[i] ==
      replace_char) {
        sentence[i] = '#';
      }

    }

    printf("Modified sentence: %s",
    sentence); return 0;
  }
```

OUTPUT:

Enter a sentence: veltech university is in chennai
Enter a character to replace: u
Modified sentence: veltech #niversity is in Chennai

b) Write a program that generates a random number and asks the user to guess what the number is. If the user's guess is higher than the random number, the program should display "Too high, try again." If the user's guess is lower than the random number, the program should display "Too low, try again." The program should use a loop that repeats until the user correctly guesses the random number.

Algorithm:

1. Generate a random number between a specified range.
2. Initialize a loop that will run until the user correctly guesses the random number.
3. Ask the user to enter a guess for the random number.
4. Check if the guess is equal to the random number. If it is, exit the loop and print a message congratulating the user.
5. If the guess is higher than the random number, print a message saying "Too high, try again".
6. If the guess is lower than the random number, print a message saying "Too low, try again".
7. Repeat steps 3-6 until the user correctly guesses the random number.
8. End the program.

PROGRAM:

```
#include
<stdio.h>
#include
<stdlib.h>
#include
<time.h>

int main() {
  srand(time
  (0));
  int randomNumber =
  rand() % 100 + 1; int
  guess;
  do {
    printf("Guess the number
    between 1 and 100: ");
    scanf("%d", &guess);
    if (guess >
      randomNumber) {
```

```
            printf("Too high, try
            again.\n");
        } else if (guess <
            randomNumber) {
            printf("Too low, try
            again.\n");
        }
    } while (guess != randomNumber);
    printf("Congratulations! You guessed the number %d.\n",
    randomNumber); return 0;
}
```

OUTPUT:

```
 Guess the number between 1 and
100: 80 Too low, try again.
Guess the number between 1
and 100: 90 Too high, try again.
Guess the number between 1
and 100: 81 Too low, try again.
Guess the number between 1
and 100: 82 Too low, try again.
Guess the number between 1 and 100: 83
Congratulations! You guessed the number
83.
```

Result: Thus, the program is written and executed successfully.