

- 1.(a) Define Structured Programming Language. Write down some basic features of SPL. 3
- (b) Consider the following code snippet. Write down the final output of a,b,c. 3
 - (i) `a=4,b=5;`
`b=a++ + a--;`
`a=++b + b--;`
`printf(“%d%d”,a,b);`
 - (ii) `x=10;`
`b= x++;` `c=b--;`
`a= -b + c++;`
`printf(“%d%d%d”,a,b,c);`
- (c) Write a ‘C’ program that takes temperature in celcius and converts it into fahrenheit scale. 2.75

- 2.(a) Write down the rules for valid declaration of identifiers. 3.5
 Consider following identifier declarations and check whether they are valid or invalid.
 - (i) 12ab
 - (ii) ab12
 - (iii) _ab
 - (iv) a#b
 - (v) a b
- (b) Explain different types of C programming operators with appropriate example. 3.5
- (c) Write short note on “#define” and “#include” 1.75

- 3.(a) Explain array declaration and definition. 2
- (b) Write short note on “1-D” and “2-D” array. 2.75
- (c) Write a C program to check leap year. 4

- 4.(a) Explain the difference between while and do-while loop in C with proper example. 3
- (b) Write a C program that calculates the sum of even and odd numbers from 1 to 50 using do while loops. 3
- (c) Describe difference between nested if-else and switch statement with example. 2.75

- 5.(a) Write a C program to print the following series using while loop. 4
 0 1 1 2 3 5 8 13
- (b) Write the output of the following code frugment. 3.5


```
main()
{
int a=2
switch(a)
{
printf(“Message\n”);
```

```

default:
    printf("Default\n");
case 2:
    printf("Case-2\n");
case 3:
    printf("Case-3\n");
}
printf("Exit from switch\n");
}

```

(c) Explain ternary operator with example. 1.25

- 5.(a) Explain the difference between while and do-while loop in C with proper example. 3
 (b) Write a C program that calculates the sum of even and odd numbers from 1 to 50 using do while loops. 3.5
 (c) Describe difference between nested if-else and switch statement with example. 2.25

6.(a) Write a C program to print the following pattern. 3

```

      *
    *  *
  *  *  *

```

- (b) What is pointer? Why is it used in C? 2
 (c) What is the output of the following code 3.75

```

main
{
int x,y;
int *ptr;
x=100;
ptr=&x;
y=*ptr;
printf("%d\n",y);
}

```

- 7.(a) Explain function declaration, function definition and function calls. 3
 (b) What are the types of function in C. Give example. 2.25
 (c) What is recursive function. Write a program to calculate factorial of an integer value using recursive function. 3.5

- 8.(a) Define structures. How does the structure variable declaration differ from structure type declaration? 3
 (b) Compare union and structures. When union is more useful than structure? Explain with example. 3.25

- (b) Define file pointer. Suppose 200 characters are stored. All the characters are separated by single space. Write a complete program to open the file and determine the frequency of each character. Finally, write the frequency in another file named "frequency.txt". 2.5