 MODULE: INTRODUCTION TO PROGRAMMING

MODULE CODE: BISE011

Duration: 2 Hours

Reading time: 10 Minutes

Instructions to Candidates:

1. This paper consists of Sections A and B.
2. Section A is compulsory.
3. Answer any three questions from Section B.
4. Always start a new question on a fresh page.
5. Attach any rough.
6. Total marks 100.

This question paper contains 5 questions and 5 pages.
SECTION A: COMPULSORY

QUESTION 1: (25 MARKS)

(a) Define the following with help of an example
i. Variables
ii. Constants
iii. Keywords (6 marks)

(b) Explain the difference between break and continue with help of an example. (5 marks)

(c) Determine the output of the following programs. (10 marks)

Program 01
#include<stdio.h>
#include<conio.h>
main()
{
  int i=3,*j;
  j=&i;
  printf("\n%d",i);
  printf("\n%d",&i);
  printf("\n%d",j);
  printf("\n%d",&j);
  printf("\n%d","i);
  printf("\n%d","j);
  printf("\n%d","(&i));
  getch();
  (Assume i is located at address 2000 and
  j is located at address 3000)
}

Program 02
#include<stdio.h>
#include<conio.h>
calculate(int x1,int y1);
main()
{
  int x=2,y=3,x1,y1;
calculate(x,y);
  printf("\n%d  %d",x1,y1);
  getch();
  }
calculate(int x1,int y1)
{
  x1=x1+2;
y1=y1+2;
}

To be continued...
**Question 1 (continued)**

(c) The following program prompts the user to enter the temperature in Fahrenheit. It uses the formula to convert the temperature to centigrade. The program outputs wrong results on all sorts of input in spite of using the right conversion formula. Determine where the error lies and correct the program.

```c
/*PROGRAM FOR TEMPERATURE CONVERSION*/
#include<stdio.h>

#include<conio.h>
main()
{
    float c,f;
    printf("\nINPUT THE TEMPERATURE IN FARENHEIT: ");
    scanf("%f",&f);
    c=(5/9) * (f-32);
    printf("%f",c);
    getch();
}
```

(4 marks)
SECTION B: ANSWER ANY THREE QUESTIONS

QUESTION 2 (25 MARKS)

(a) Write a C program to find the average marks of six subjects and display the results according to the following criteria:

<table>
<thead>
<tr>
<th>AVERAGE</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;34 &amp; &lt;50</td>
<td>Third division</td>
</tr>
<tr>
<td>&gt;49 &amp; &lt;60</td>
<td>Second division</td>
</tr>
<tr>
<td>&gt;60 &amp; &lt;75</td>
<td>First division</td>
</tr>
<tr>
<td>&gt;75 &amp; &lt;100</td>
<td>Distinction</td>
</tr>
<tr>
<td>If marks in any subject less than 35</td>
<td>Fail</td>
</tr>
</tbody>
</table>

Note: the average marks obtained are checked with different conditions and the if else blocks are used. (10 marks)

(b) Write a C program to convert years into 1. Minutes, 2. Hours, 3. Days, 4. Months, 5. Seconds using the if and switch () statements. (15 marks)

QUESTION 3 : (25 MARKS)

(a) Input 02 square matrices. A square matrix is a matrix with equal number of rows and columns. Write a program that will perform the following operations:

- Add two matrices
- Subtract two matrices

(15 marks)

(b) Write program statements that will display the series 0, 4, 8, 12, 16......100 by making use of the following loops

- for loop
- while loop
- do ... while loop.

(10 marks)
QUESTION 4 : (25 MARKS)

(a) Write a C program to find the average sales of an item out of 12 months sale using single dimensional array. (6 marks)

(b) Write a C program to sum of squares and cubes of array elements using pointers. The array can be declared as follows: int b[ ] = {1,2,3,4,5}. (5 marks)

(c) Write a C program to copy element of one array to another array using pointers. The array can be declared as follows: int s[ ] = {10,20,30,40,50}. (5 marks)

(d) Write a C program to evaluate the equation \( y = x^1 + x^2 + \ldots + x^n \) using function. Note: the POW( ) function calculates power of 'x' by the returned value of the function. (9 marks)

QUESTION 5 (25 MARKS)

(a) Write a C program to calculate the factorial of entered number by using recursive function. (5 marks)

(b) Write a C program to copy structure elements from one object to another object. Note: the structure disk is defined with three member variables char co [15], float type and int price respectively. (9 marks)

(c) Write a C program to display names, rollnos, and grades of 3 students who have appeared in the examination. Declare the structure of name, rollnos and grade. Create an array of structure objects. Read and display the contents of the array. (11 marks)

***END OF QUESTION PAPER***