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UESTION 01: Write a program to calculate the x raised to the y power

using a for iteration control statement?

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**Mid Term Examination 2024**

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| --- | --- | --- | --- |
| **Name of Student** |  | **Reg. No.** |  |
| **Subject** | Programming Fundamentals | **Program** | BS-CS |
| **Facilitator** | Mrs. Naheed Sattar | **Time** | 1.5 hrs |
| **Students** | 42 | **Maximum Marks** | 25 |
| **Date** | 28-11-2024 | **Section Code** | 032410102 |

**INSTRUCTIONS:**

* All questions are compulsory.
* Read the questions carefully first and then answer them.
* There is no short cut to success so the best way for success here would be to think and think.
* Please give precise, specific answers rather than playing with words.

**(CLO\_1):  (Cognitive Level C2, GA\_1, i.e., Basic Problem Solving)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Q.1** | **Estimated Time To Complete Question (10 Minutes)** | **CLO 1** | **Max Marks 03** |

Differentiate between constants and variables?

**(CLO\_2):  (Cognitive Level C3, GA\_2, i.e., Apply basic programing Concepts)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Q.2** | **Estimated Time To Complete Question (15 Minutes)** | **CLO 2** | **Max Marks 04** |

Write a program to calculate x raised to the power y, where x and y are integers entered by the user.

[Hint: xy]

**(CLO\_2):  (Cognitive Level C3, GA\_2, i.e., Apply basic programing Concepts)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Q.3** | **Estimated Time To Complete Question (30 Minutes)** | **CLO 2** | **Max Marks 10** |

Make a program with a function method, to ask the user to enter the marks of 4 subjects and the max marks, then calculate according the following menu:

1. Calculate the total and display it.

2. Calculate the total percentage and display it.

3. Calculate overall grade.

A+ grade: 90% - 100%, A grade: 80% - 89%, B+ grade: 70%-79%,

B grade: 60% - 69%, C grade: 50% to 59%, D grade: 40% - 49%.

Fail for any other percentage.

[Hint: Use switch case statement for menu selection and if else to display the grade. ]

**(CLO\_2):  (Cognitive Level C3, GA\_2, i.e., Applying basic programming)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Q.4** | **Estimated Time To Complete Question (15 minutes)** | **CLO2** | **Max Marks 04** |

Give the output of the following programs:

|  |  |
| --- | --- |
| **a) (02)**  public class Demo{     public static void main(String[] arr){          int num1 = 100, num2 = 100;          int num3 = 500, num4 = 600;        if(num1==num2)  {              System.out.println("num1 == num2");          }          else  {              System.out.println("num1 != num2");          }          if(num3 == num4)  {              System.out.println("num3 == num4");          }          else  {              System.out.println("num3 != num4");           }      }  } | **b) (02)**  public class Test {  public static void main(String[] args) {  int i;  for (i=1;i<=5;i++)  {  System.out.println(i + ")"+i\*i);  }  }  } |

**(CLO\_2):  (Cognitive Level C3, GA\_2, i.e., Applying basic programming)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Q.5** | **Estimated Time To Complete Question (15 minutes)** | **CLO2** | **Max Marks 04** |

Find the errors in the following programs:

|  |  |
| --- | --- |
| **a) (02)**  public class Loop {  public static void main(String args[])  {  System.out.println("Multiplication Table of 7");  int a = 7, ans;  int i;  for(i=1; i<=10; i++}  {  for (i = 1, i <= 10; i++)  {  ans = a \* i;  System.out.println(ans);  }  }  }  } | **b) (02)**  public class HiFive {  public static void main(String args[])  {  int a = 2, b = 8, c = 6;  System.out.println("Finding the largest number \n");  if (a > b && a > c)  {  System.out.println(a + " is the largest Number");  }  else if (b > a && b > c)  {  System.out.println(b + " is the smallest Number");  }  else  System.out.println(c + " is the largest Number");  }  } |

Ask the user to enter marks obtained in a course and the total marks of the course.

Then display a menu

Press 1 to calculate percentage.

Press 2 to display grade.

If the user presses 1 then percentage should be displayed and if the user presses 2

the grade against the marks should be displayed. (Hint: use switch statement for

menu selection and else if to display the grade).

Ask the user to enter marks obtained in a course and the total marks of the course.

Then display a menu

Press 1 to calculate percentage.

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Ask the user to enter marks obtained in a course and the total marks of the course.

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If the user presses 1 then percentage should be displayed and if the user presses 2

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menu selection and else if to display the grade).