**Bahria University**

**Software Engineering Department**



**Course: CEL-221 Computer Architecture and Organization**

**Term: Fall 2019, Class: BSE 3(B)**

**Assignment No:**

|  |  |
| --- | --- |
| **0** | **2** |

**Submitted By:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Q** | **A** | **I** | **S** | **E** | **R** |  | **A** | **B** | **B** | **A** | **S** |

**Enrollment No.:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 2 | - | 1 | 3 | 1 | 1 | 8 | 2 | - | 0 | 3 | 0 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Submission Date** | | | | | | | |  |
| **3** | **1** | **/** | **1** | **2** | **/** | **1** | **9** |

**Submitted To:**

**Engr. Zohaib Shahzad**

**Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Max Marks: \_\_\_\_\_\_\_\_\_\_\_ Marks Obtained: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Task:** Solve the puzzle of Tower of Hanoi with 4 disks and calculate the minimum number of moves required?

**Code:**

.data

input: .asciiz "Input total number of Disks : "

output: .asciiz "Minimum Number of Moves required are : "

.text:

la $a0,input

li $v0,4

syscall

li $v0,5

syscall

move $t0,$v0

li $t1,2

li $t2,2

addi $t0,$t0,-1

bgtz $t0,power

power:

mul $t2,$t2,$t1

addi $t0,$t0,-1

bgtz $t0,power

addi $t2,$t2,-1

la $a0,output

li $v0,4

syscall

move $a0,$t2

li $v0,1

syscall

li $v0,10

syscall

**Output:**

