



COMSATS University Islamabad, Lahore Campus

Assignment # 3 – FALL 2023

Course Title:	Operating Systems	Course Code:	CSC32	Credit Hours:	3(2,1)
Course Instructor:	Dr. Hasan Jamal	Programme Name:	BCS		
Due Date:	30/11/2023	Maximum Marks:	10		

Important Instructions / Guidelines:

- No late submission allowed.
- Any solution found to be copied would strictly result in zero marks.
- Maximum three persons per group is allowed for submission.

Question:

CLO: <3>; Bloom Taxonomy Level: <Analyzing>

Marks: 10

In a given memory system, addresses are 16-bits and the page size is 1024 bytes (i.e. 2^{10} bytes).

- How many bits of a logical address are used to determine the page number and how many bits are used to determine the offset?
- How many entries would a page table need to have?
- Using the page table below, determine the physical addresses for the following logical addresses.

- | | | | |
|-------|------------------|------|------------------|
| (i) | 0101101011010111 | (ii) | 1110000010110100 |
| (iii) | 0001010100010010 | (iv) | 0101100000010010 |

Page #	Page Table Entry
21	26
56	4
5	21
20	50
34	47

To determine the physical addresses above, how many distinct entries of the page table were accessed? Which page table entries are they and what page frame numbers do these entries contain?