BEYKENTUNIVERSITY **Faculty of Engineering and Architecture**

Name, Surname : ANSWERS (30 minutes)
Student ID :
CourseCode :480000000001357
Title :OPERATING SYSTEMS
Assessment : ■ Quiz ☐ Midterm ☐ Final
Date :22.12.2017 13:00

Please ensure that your name appears on each booklet, together with the number of questions attempted.

A paging system uses **16-byte pages and 8-bits for logical address space.**
The physical memory is **1Kbytes**, and Operating System uses 256-bytes for its kernel processes.
The page table and the logical memory is given below.

i) Find physical memory addresses for each letter **a, b, c, d, e.**
ii) How many bits is the total page table?
iii) Which logical address will be at the **cell 72** in physical memory?

Logical-memory	page-table
6 a	p -> (p - Z) mod MAX(PAGE), Z is calculated as 3 + (last digit of student number)
13 b	
24 c	
47 d	
56 e	

p-4/16

i) 16 byte → 24 n=4 256 bytes → 2^8 physical memory address
8 bits → m=8 logical frame ofset

6 → 00000110, 00110 0 1 1 0 → 198
0
0-4/16=12 2^7 2^6 2^2 2^1
128 64 4 2

13 → 00001101, 001 1 0 0 1 1 0 1 → 205
0
128 64 8 4 1
0-4/16=12

24 → 00011000, 001 1 0 1 1 0 0 0 → 216
1
128 64 16 8
1-4/16=13

47 → 00101111, 001 1 1 0 1 1 1 1 → 239
2
128 64 32 8 4 2 1
2-4/16=14

56 → 00111000, 001 1 1 1 1 0 0 0 → 248
3
128 64 32 16 8
3-4/16=15

ii) 16×(4+6) = 160 (4 → m-n, 6 → 10-n)

ii) cell 72 0 0 0 1 0 0 1 0 0 0
64 8 4 ofset

logical address
1 1 0 0 1 0 0 0
8 4 ofset

$\boxed{x}$-4/16=4