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# DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – DECEMBER 2023

Semester: IV

351HE24 COMPUTER SYSTEMARCHITECTURE

Time: 3:00 Hours

Max. Marks: 100

Answer any FIVE Questions (5 x 20 = 100 Marks)

1. a) Describe the main components and main operation phases of the CPU with a neat diagram. (10 Marks)  
b) Describe computers On the Basis of Hardware Design **and** Type. State applications of each. (10 Marks)
2. a) Describe 8086 microprocessor architecture. Draw a neat diagram. (10 Marks)  
b) Explain any 8 data transfer instructions of 8086 microprocessor with examples. (10 Marks)
3. a) Discuss types of pipelining in detail. (10 Marks)  
b) Discuss array processor and its architecture in detail. (10 Marks)
4. a) Elaborate on I/O bus and interface modules with a diagram. (10 Marks)  
b) Give a detailed explanation on handshaking with respect to data transfer. Draw the diagram. (10 Marks)
5. a) Discuss parallel processing with the help of a diagram. (10 Marks)  
b) Illustrate instruction pipeline. (10 Marks)
6. a) Describe vector processing with an operation example. (10 Marks)  
b) Explain signed magnitude addition and subtraction with the help of a table and implementation diagram. (10 Marks)
7. a) Describe daisy chaining priority with respect to interrupt handling. Draw a diagram. (10 Marks)  
b) Elaborate on DMA transfer with a diagram. (10 Marks)