

QP CODE 2050555303

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DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – JUNE 2024

Semester: V 055 CS 53 MICROPROCESSOR AND ITS APPLICATION

Time: 3:00 Hours

Max. Marks: 100

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

1. a) Distinguish microprocessor from microcontroller with 5 points. (5 Marks)
b) Describe 8051 Microprocessor Pin Configuration or Functional pin diagram. (15 Marks)
2. a) Discuss the three available instruction formats of 8085 microprocessor. Give examples. (10 Marks)
b) Briefly explain the following instructions. Give examples.
 - i. JMP (2 Marks)
 - ii. CALL (2 Marks)
 - iii. NOP (2 Marks)
3. a) Draw and explain the timing diagram of memory write machine cycle. (4 Marks)
b) Elaborate on how a 7 segment display can be interfaced with an IC AT89S51 microcontroller? (10 Marks)
c) Illustrate programmed I/O mode of data transfer. Produce a flowchart. (5 Marks)
d) Discuss how a 4KB RAM can be interfaced with 8085 and starting address is A000H? Use a 3*8 decoder. (5 Marks)
4. a) Draw and Describe the pin configuration of 8255 PPI (Programmable Peripheral Interface). (8 Marks)
b) Explain in detail the Functional Block Diagram of 8255 PPI. (12 Marks)
5. a) Demonstrate the time delay program using 8-bit register as counter and 18-bit register counter. (10 Marks)
b) Elaborate on the working of traffic light control with the respective sequence followed in the program. (10 Marks)

- 6. a) Describe 8085 architecture diagram with various functional blocks. **(10 Marks)**
- b) With a neat diagram, illustrate the steps involved in fetch, decode and execution of instructions. **(6 Marks)**
- c) State the status of the flags after execution of the given instruction:
 ADD AF,A6 **(4 Marks)**
- 7. a) Describe the interfacing of stepper motor to a micro-controller with a neat diagram. **(10 Marks)**
- b) Explain how to operate water level controller circuit using 8051 microprocessor? State advantages and applications. **(10 Marks)**