

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE – APRIL - 2023  
MICROCONTROLLER AND APPLICATIONS**

(Maximum Marks : 75)

[Time : 3 hours]

**PART–A**

**I. Answer all** the following questions in one word or sentence. Each question carries 1 mark.

**(9x1=9 marks)**

		Module Outcome	Cognitive level
1	Each instruction has an opcode part and an .....part.	M2.01	U
2	8051 has ..... Bytes of Internal RAM.	M1.02	R
3	Flag register of 8051 is called .....	M1.03	U
4	Jump instruction related to carry generation is .....	M2.03	U
5	Unit of Baud rate is .....	M3.04	U
6	Upon Reseting the content of PC becomes .....	M3.01	U
7	The process of connecting devices together so that they can exchange the information is called .....	M4.01	U
8	List the control pins of LCD.	M4.03	R
9	Name an Interfacing Standard to allow compatibility among data communication equipments.	M3.04	R

**PART B**

**II. Answer any Eight** questions from the following. Each question carries 3 marks.

**(8x3=24)**

		Module Outcome	Cognitive level
1	Distinguish Microprocessors and Microcontrollers.	M1.01	U
2	Distinguish Address Bus and Data Bus of 8051 Microcontroller.	M1.03	U
3	Discuss Register Banks of 8051.	M1.03	U
4	Discuss any three types of Instructions.	M2.02	U
5	Summarize any three bit level instructions.	M2.03	U
6	Distinguish MOV, MOVX instructions.	M2.02	U
7	Discuss Vectored interrupts of 8051.	M3.01	U
8	Explain Serial Data Transmission modes.	M3.04	U
9	Discuss DAC interfacing with 8051 with a block diagram.	M4.04	U
10	Explain 4x4 Matrix keyboard interfacing with 8051 Microcon (Diagram only).	M4.03	U

### PART C

Answer **all** questions from the following. Each question carries 7 marks.

**(6x7=42marks)**

		Module Outcome	Cognitive level
III	List any seven salient features of 8051. <b>OR</b>	M 1.02	R
IV	Discuss Architecture of 8051.	M1.03	U
V	Write an ALP to multiply two eight bit numbers using 8051. <b>OR</b>	M2.04	A
VI	Write an ALP to add two eight bit numbers using 8051.	M2.04	A
VII	Discuss SCON Register. <b>OR</b>	M3.04	U
VIII	Discuss steps in executing an Interrupt.	M3.01	U
IX	Discuss the structure of IE register. <b>OR</b>	M3.01	U
X	Explain TMOD Register.	M3.02	U
XI	Describe Interfacing of Stepper Motor with 8051. <b>OR</b>	M4.01	U
XII	Discuss the interfacing of DC motor with 8051.	M4.02	U
XIII	Explain interfacing of ADC with 8051. <b>OR</b>	M4.04	U
XIV	Discuss interfacing of 16x2 LCD system with 8051 (Diagram only)	M4.03	U

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