

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL - 2026**

MICROCONTROLLER AND APPLICATIONS

[Maximum marks: 75]

[Time: 3 Hours]

PART A

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

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	The two parts of an instruction are and	M2.01	R
2	Address Bus of 8051 is bit size.	M1.02	R
3	Stack Pointer is a bit register.	M1.03	R
4	CPL C is a bit level instruction.	M2.03	R
5 and are the two methods for serial communication.	M3.04	U
6	Interrupt Priority can be set by register.	M3.01	U
7	Define Interfacing.	M4.01	R
8	Number of control pins in LCD is	M4.03	U
9	RS 232 is an standard.	M3.04	U

PART B

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

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Discuss the block diagram of general purpose Microprocessor based system.	M1.01	U
2	Discuss Address Multiplexing.	M1.03	U
3	Describe registers present in Register Bank0 of 8051.	M1.03	U
4	Discuss any three rotate instructions of 8051.	M2.02	U
5	Distinguish JC and JNC instructions of 8051.	M2.03	U
6	Discuss SWAP instruction with an example.	M2.02	U
7	Describe Vectored Interrupts of 8051 and give any two examples.	M3.01	U
8	Discuss the functions of SBUF register.	M3.04	U
9	Discuss interfacing of ADC with 8051 (Diagram only).	M4.04	U
10	Discuss interfacing of 16x2 LCD system with 8051(Diagram only).	M4.03	U

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Describe ports in 8051.	M1.02	R
	OR		
IV	Explain Architecture of 8051.	M1.03	U
V	Write an ALP to Multiply two eight bit numbers using 8051.	M2.04	A
	OR		
VI	Write an ALP to subtract two eight bit numbers using 8051 Microcontroller.	M2.04	A
VII	Explain PCON Register.	M3.04	A
	OR		
VIII	Discuss the steps in executing an Interrupt.	M3.01	U
IX	Discuss TMOD Register.	M3.02	U
	OR		
X	Describe IP Register.	M3.01	U
XI	Discuss Interfacing of DC Motor with 8051.	M4.02	U
	OR		
XII	Describe the interfacing of Stepper Motor with 8051.	M4.01	U
XIII	Discuss interfacing of DAC with 8051.	M4.04	U
	OR		
XIV	Describe interfacing of 4x4 Matrix Keyboard with 8051.	M4.03	U
