25ELP104

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(First Semester)

Branch – **APPLIED ELECTRONICS**

8 - BIT MICROCONTROLLERS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	When the microcontroller executes some arithmetic operations, then the flag bits of which of the following register are affected? (a) DPTR (b) PSW (c) PC (d) SP	K1	CO1
	2	Which of the following bits are used for setting the data frame size? (a) MPCM (b) DOX (c) U2X (d) UCSZ0	K2	CO1
2	3	Which memory storage is widely used in PC and Embedded Systems? (a) EEPROM (b) Flash memory (c) SRAM (d) DRAM	K1	CO2
	4	Which type of memory is suitable for low volume production of embedded systems? (a) Non-volatile (b) RAM (c) Volatile (d) ROM	K2	CO2
3	5	Which bit permits to enable (if set) or disable (if cleared) all the interrupts in an INTCON register? (a) GIE (b) ADIE (c) RBIE (d) TOIE	K1	CO3
	6	Which of the following file extension that is loaded in a microcontroller for executing any instructions? (a) .c (b) .txt (c) .hex (d) .doc	K2	CO3
4	7	When the microcontroller executes some arithmetic operations, then the flag bits of which of the following register are affected? (a) DPTR (b) PSW (c) PC (d) SP	K1	CO4
	8	Which of the following bit/s of the status register that allows the microcontroller to operate in its power mode? (a) CPU off (b) Z (c) N (d) reserved	K2	CO4
5	9	The total space for the data memory available in the AVR based microcontroller is? (a) FFFH (b) FH (c) FFFFH (d) FFFFFFFH	K1	CO5
	10	What language is a typical Arduino code based on? (a) Assembly code (b) python (c) java (d) C/C++	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Discuss about the CISC Vs RISC.	K4	CO1
		(OR)		
	11.b.	Explain an Memory Organization.		
2	12.a.	Illustrate the Function of PIC16C.	K4	CO2
		(OR)		
	12.b.	Justify the Control Statements.		
3	13.a.	Evaluate about the Timer 2 in PIC.	K4	CO3
		(OR)		
	13.b.	Explain about the watch dog timer.		
4	14.a.	Explain the USART.	K5	CO4
		(OR)		
	14.b.	Discuss about the Oscillator configuration.		
5	15.a.	Justify the register file in AVR family.	K5	CO5
		(OR)		
	15.b.	Discuss about the Network Communication(Wi-Fi).		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Enumerate the-Special Function Registers.	K4	CO1
2	17	Elucidate the PIC16C Data Operations.	K4	CO2
3	18	Evaluate the Parallel Slave Port.	K4	CO3
4	19	Compare the SPI mode and I2C mode.	K5	CO4
5	20	Elucidate the Architecture of AVR family.	K5	CO5

Z-Z-Z END