DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING
B. Tech. I-Mid Question Bank (R22 Regulation)

Academic Year: 2024-2025   **Semester: V**
Subject Name: Microcontrollers and Fundamentals of IOT [22EC501PC]
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PART-A

Q.NO	QUESTIONS	MARKS	BL	CO	UNIT NO.
	MID-I Questions				
1	List and briefly explain shift and Rotate instructions with examples.	2M	L1	CO1	I
2	What is Memory segmentation and List out different segments of 8086?	2M	L1	CO1	I
3	Explain 8086 interrupts.	2M	L1	CO1	I
4	Describe the flag register of 8086 Microprocessor and explain function of each flag.	2M	L2	CO1	I
5	List and briefly explain string instructions with examples.	2M	L6	CO1	I
6	List out minimum and maximum mode pins of 8086.	2M	L1	CO1	I
7	List out the difference between microprocessor and microcontroller.	2M	L1	CO2	II
8	Explain PSW of 8051.	2M	L1	CO2	II
9	Explain the role of C/T bit in the TMOD register.	2M	L3	CO2	II
10	Sketch pin diagram of 8051.	2M	L1	CO2	II
11	List out various interrupts of 8051 Microcontroller.	2M	L1	CO2	II
12	List important features of 8051.	2M	L1	CO2	II
13	Explain the concept of methods of serial communication with examples.	2M	L1	CO3	III
14	Give the RS 232 Standard details.	2M	L2	CO3	III
15	List out the various communication interfaces.	2M	L2	CO3	III
	MID-II Questions				
16	List out the important features of the A/D converter.	2M	L1	CO3	III
17	Write short notes on UART.	2M	L3	CO3	III
18	Draw the circuit diagram of DAC.	2M	L2	CO3	III
19	What are the application area of IOT?	2M	L1	CO4	IV
20	List out the types of Actuator.	2M	L2	CO4	IV
21	Define IOT growth.	2M	L1	CO4	IV
22	What are the various types of IOT Levels?	2M	L4	CO4	IV
23	What is IOT stack?	2M	L2	CO4	IV
24	What is the definition of IOT?	2M	L3	CO4	IV
25	What are the similarities between M2M & IOT?	2M	L1	CO5	V

26	What is NFV for IOT?	2M	L2	CO5	V
27	What is SDN for IOT?	2M	L3	CO5	V
28	What are the differences between M2M & IOT?	2M	L1	CO5	V
29	What is M2M Value Chains?	2M	L6	CO5	V
30	What is IOT value chains?	2M	L1	CO5	V

PART-B

MID-I Questions					
Q.NO	QUESTIONS	MARKS	BL	CO	UNIT NO.
1	Write ALP to arrange a list in Ascending order (bubble sort algorithm.	4	L6	CO1	I
2	List out different assembler directives used in 8086 microprocessor with examples.	4	L4	CO1	I
3	Write ALP to display string reverse.	4	L2	CO1	I
4	Explain the function of the following instructions. a. AAD b. MOVSB c. LAHF d. JNZ e. LEA f. DAD	4	L2	CO1	I
5	Define Macro? Explain its importance in 8086 programming.	4	L2	CO1	I
6	Describe the register organization of 8086 Microprocessor and explain it.	4	L6	CO1	I
7	Define addressing mode and explain different addressing modes with examples.	8	L2	CO1	I
8	Sketch pin diagram of 8086 and explain.	8	L6	CO1	I
9	Sketch the internal architecture of 8086 microprocessor and explain its operation.	8	L6	CO1	I
10	List out the different instruction set of 8051 microcontroller and explain with examples.	4	L6	CO2	II
11	Explain i) IE ii)IP registers in detail.	4	L3	CO2	II
12	Explain: i) TCON ii) TMOD registers in detail.	4	L6	CO2	II
13	WALP for delay generation using timers.	4	L5	CO2	II
14	Explain i) SCON ii)PCON registers in detail.	4	L6	CO2	II
15	How does 8051 processes the ISR address on an interrupt?	4	L6	CO2	II
16	Sketch the architecture of 8051 Microcontroller and explain its Operation.	8	L3	CO2	II
17	Explain the different addressing modes used in 8051 microcontroller with examples.	8	L2	CO2	II
18	Explain I/O Ports of 8051.	8	L3	CO2	II
19	Draw the interfacing diagram of D/A convertor with 8051 CPU and explain its operation.	4	L3	CO3	III

20	Interface Eight 8K RAM chips and Four 8K×4 EPROM chips with 8051 so as to form a completely working system configuration.	4	L3	CO3	III
21	Sketch the interface circuit diagram of LCD with 8051 and explain its operation in detail.	4	L6	CO3	III
MID-II Questions					
22	Draw the interacting diagram of A/D convertor with 8051 microprocessor and explain its operation.	4	L6	CO3	III
23	Explain the concept of keyboard and interfacing along with block diagram.	4	L6	CO3	III
24	Explain I2C Bus interface with diagram.	4	L6	CO3	III
25	List out the types of Actuator.	4	L2	CO4	IV
26	Explain IOT growth.	4	L2	CO4	IV
27	What are the various types of IOT Levels?	4	L1	CO4	IV
28	Explain IOT stack.	4	L2	CO4	IV
29	What is the definition of IOT?	4	L4	CO4	IV
30	LIST out the Evolution of IoT.	4	L3	CO4	IV
31	What are the enabling technologies in IOT?	8	L4	CO4	IV
32	Explain the Characteristics of IoT.	8	L6	CO4	IV
33	Explain IoT sensing and actuation.	8	L6	CO4	IV
34	Explain the Global information monopolies.	4	L6	CO5	V
35	Explain NFV for IOT.	4	L5	CO5	V
36	Explain SDN for IOT.	4	L6	CO5	V
37	What are the differences between M2M & IOT?	4	L3	CO5	V
38	Explain is M2M Value Chains.	4	L5	CO5	V
39	Explain is IOT value chains.	4	L3	CO5	V
40	Sketch the architecture of M2M and explain its operation.	8	L3	CO5	V
41	Explain emerging industrial structure for IOT.	8	L6	CO5	V
42	Explain international driven global value.	8	L6	CO5	V