Q.No	QUESTION	MARKS	SECTION	UNIT
1.	What is meant by an Integrated circuit? Briefly explain about different types of integrated circuits.	8	Section-1	1
2.	Briefly explain bi-directional shift register with parallel load.	8	Section-1	1
3.	Construct 4 x16 line decoder using 3 x 8 line decoder.	8	Section-1	1
4.	Construct 16x1 multiplexer with two 8x1 and one 2x1 multiplexers.	8	Section-1	1
5.	a) Design a 4-bit binary-to-Gray code converter. (4M) b) Convert binary code to gray code. (2*2 = 4M) (i) $(1111)_B$ (ii) $(0101)_B$	8	Section-1	1
6.	a) Convert the $(-5.96)_{10}$ to binary number using 8-bit binary representation with 4-digit integers and 4-digit fractional parts. (4M) b) Compute 0.95 + (-0.555) using fixed point numbers. (4M)	8	Section-1	1
7.	Explain floating point representation of $(7924.622)_{10}$ in single precision and double precision format.	8	Section-1	1
8.	Perform the binary arithmetic operation (+77) + (-23) and (-77) - (-23) in using signed 2's complement representation for negative numbers.	8	Section-1	1
9.	Convert the following to binary to octal (4*2 = 8M) (a) $(2A7)_{16}$ (b) $(1AB)_{16}$ (c) $(10110111)_2$ (d) $(11011010)_2$	8	Section-1	1
10.	Briefly explain about the memory unit.	8	Section-1	1
11.	Describe register transfer language with an example.	8	Section-2	2
12.	Design and explain a common bus system for four register using multiplexers.	8	Section-2	2
13.	Explain about Arithmetic micro operations. With suitable examples.	8	Section-2	2
14.	a) Explain about logic micro operations. (4 M) b) Explain about shift micro operations. (4 M)	8	Section-2	2
15.	Explain about Arithmetic logic shift unit.	8	Section-2	2
16.	Sketch and explain the binary adder and subtractor with an example.	8	Section-2	2
17.	Design a 4-bit combinational incrementer circuit using four half adders.	8	Section-2	2
18.	Design and explain the concept of tri-state buffer in a common bus system.	8	Section-2	2
19.	Explain the following application of Logic Microopeartions with an example. (4*2 = 8M) a) Selective-Set b)Selective-Complement c) Mask d) Clear	8	Section-2	2
20.	Sketch and explain the 4-bit arithmetic circuit.	8	Section-2	2
21.	What is meant by Memory-Reference instructions? Explain.	8	Section-3	3
22.	Briefly explain the registers in basic computer with a neat diagram.	8	Section-3	3
23.	Describe Instruction cycle with a neat sketch.	8	Section-3	3
24.	Explain with diagram about Computer Description.	8	Section-3	3
25.	Describe the Design of Accumulator Logic.	8	Section-3	3

26.	Discuss about timing and control of basic computer.	8	Section-3	3
27.	Demonstrate input-output configuration.	8	Section-3	3
28.	Briefly explain and design of a basic computer.	8	Section-3	3
29.	Explain about program interrupt with an example.	8	Section-3	3
30.	Demonstrate the instruction format.	8	Section-3	3
31.	Explain about General Register Organization.	8	Section-4	4
32.	Demonstrate memory stack organization.	8	Section-4	4
33.	Demonstrate register stack organization.	8	Section-4	4
34.	Define several instruction formats with examples.	8	Section-4	4
35.	What are the types of addressing modes? Explain.	8	Section-4	4
36.	What are the types of notations? Explain about reverse polish notation.	8	Section-4	4
37.	Give one numerical example for all addressing modes.	8	Section-4	4
38.	Explain about data transfer instructions.	8	Section-4	4
39.	Explain about data manipulation instructions.	8	Section-4	4
40.	Explain about Reduced Instruction Set Computer (RISC).	8	Section-4	4
41.	Give an Example of I/O interface unit.	8	Section-5	5
42.	Explain Connection of I/O bus to input–output devices.	8	Section-5	5
43.	What is meant by handshaking? Explain with neat diagram.	8	Section-5	5
44.	What is Asynchronous Serial Transfer.	8	Section-5	5
45.	Explain the strobe control method of asynchronous data transfer.	8	Section-5	5
46.	What are the Modes of Transfers? Explain Programmed I/O.	8	Section-5	5
47.	Explain Priority Interrupt.	8	Section-5	5
48.	What is direct memory transfer? Give an overview and the block diagram of a DMA controller.	8	Section-5	5
49.	What are the Modes of Transfers? Explain interrupt-initiated I/O.	8	Section-5	5