PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION DECEMBER 2023
(First Semester)

Branch – **SOFTWARE SYSTEMS (Five Year Integrated)**

COMPUTER ORGANISATION AND ARCHITECTURE

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	What is the radix of hexadecimal number? A) 2 B) 8 C) 10 D)16	K1	CO1
	2	ASCII is a _____ bit code A) 7 B) 8 C) 4 D) 16	K2	CO1
2	3	What is the output of XOR gate when both the inputs are true? A) 1 B) 10 C) 0 D) 11	K1	CO2
	4	Mention the memory unit whose contents can be altered during the computational process. A) PROM B) RAM C) ROM D) EPROM	K2	CO2
3	5	A group of bits that instruct the computer to perform a specific operation is called as A) Micro operation B) Macro Operation C) Instruction Code D) Register	K1	CO2
	6	Name the register which holds the temporary data. A) PC B) DR C) TR D) AR	K2	CO3
4	7	The operation of deletion in stack is called as A) stack pointer B) push C) pop D) LIFO	K1	CO3
	8	A program whose function is to start the computer when the power is turn on is called as A) Bootstrap loader B) Micro operation C) Shift Operation D) None of the above	K2	CO4
5	9	The transfer of data from peripheral devices to memory without the intervention of CPU is called as A) DMA B) I/O Interface C) Memory Interface D) None of the above	K1	CO4
	10	A multiprocessor which has its own private local memory is called as A) Loosely coupled B) Tightly Coupled C) Multiport coupled D) None of the above	K2	CO4

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.	Convert the following binary to decimal a) 101101 b) 110110	K2	CO1
		(OR)		
	11.b.	Convert the following to hexadecimal a) 112_8 b) 100101_2		
2	12.a.	Simplify the following Boolean function in sum of products form by means of a four-variable map. Draw the logic diagram using AND-OR gates $F(A,B,C,D) = \sum(0,2,8,9,10,11,14,15)$	K3	CO2
		(OR)		
	12.b.	Explain Half Adder and Full Adder in detail.		
3	13.a.	Explain Arithmetic Micro Operations with 4 bit arithmetic circuit.	K3	CO3
		(OR)		
	13.b.	Explain Computer Registers in detail.		
4	14.a.	Classify and explain the types of instruction formats with example.	K4	CO4
		(OR)		
	14.b.	Elaborate any two auxiliary memory.		
5	15.a.	Illustrate CPU-IOP communication in detail.	K4	CO5
		(OR)		
	15.b.	Discuss the characteristics of multiprocessor.		

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	Subtract the following using 2^s compliment a) 101101 from 110010 b) 100111 from 100011	K4	CO1
2	17	Explain the different types of main memory unit in detail.	K4	CO2
3	18	Discuss about Input-Output and Interrupt in detail.	K4	CO3
4	19	Describe the concept of Stack Organization.	K4	CO4
5	20	Explain I/O interface in detail.	K4	CO5

Z-Z-Z END