

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

FACULTY OF SCIENCE
B.Sc. I Year Practical Examination

COMPUTER SCIENCE
Paper III
Computer Organization and Operating System (Practical)

Time: Three Hours

Marks: 100

Note:

1. Every student must be given one question form Section A and one Question from Section B.
2. The Logic diagrams and Truth tables must be correctly drawn.
3. Almost all care is taken to design the experiment through the perspective of various modules in Theory syllabus. In case of any problems, the External Examiner and Internal Examiner can give their own data and report analogously

SECTION –A (Computer Organization)

EXPT NO.	EXPERIMENT DETAILS	MARKS
A1	Draw the logical symbols of OR,AND,NOR,NOT, NAND, EXOR and Ex-NOR gates	15
	Write truth tables of above logic gates Algorithm and Flowchart for above program	10
	Verify Truth Tables of above logic gates	10
	Oral	08
	Journal	05
A2	Draw the logical diagram of 4-bit parallel adder, subtractor	15
	Construct the circuit	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A3	Draw the logical diagram of 4-bit parallel adder/ subtractor using 2's complement .	15
	Construct the circuit	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A4	Implement Half Adder	15
	Construct the circuit	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A5	Draw the logical diagram of 4-bit shift left register using Flip Flop	15
	Construct the circuit , write Truth table	10
	Show working of circuit to the Examiner	10

	Oral	08
	Journal	05
A6	Draw the logical diagram of 4-bit shift right register using Flip Flop	15
	Construct the circuit , write Truth Table	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A7	Draw the logical diagram of Mod-3 Asynchronous UP and DOWN counter using Flip Flop.	15
	Construct the circuit , write the count sequence	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A8	Draw the logical diagram of ring counter using Flip Flop	15
	Construct the circuit , write the count sequence	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A9	Draw the logical diagram of D-type and JK Flip flop using IC	15
	Construct the circuit , verify results	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A10	Draw the logical diagram of 8:1 multiplexer	15
	Construct the circuit , verify results	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A11	Draw the logical diagram of ALU and verify the arithmetic operations with examples	15
	Construct the circuit , verify results	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A12	Draw the logical diagram of ALU and verify the Logical operations with examples	15
	Construct the circuit , verify results	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A13	Design simple control unit for selection of one input	15

	Construct the circuit , verify results	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A14	Study of RAM	15
	Construct the circuit , verify results	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05
A15	Study of ROM/EEPROM/UV PROM	15
	Construct the circuit , verify results	10
	Show working of circuit to the Examiner	10
	Oral	08
	Journal	05

SECTION –B (Operating System)

EXPT NO.	EXPERIMENT DETAILS	MARKS
B1	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that reads your name and address. It then print them on screen	20
	Oral	07
	Journal	05
B2	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that demonstrate the use of If construct	20
	Oral	07
	Journal	05
B3	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that finds the sum of first N numbers using while construct	20

	Oral	07
	Journal	05
B4	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that generate the arithmetic table using For	20
	Oral	07
	Journal	05
B5	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script to illustrate the use of case command	20
	Oral	07
	Journal	05
B6	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script to find largest / smallest of three numbers	20
	Oral	07
	Journal	05
B7	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that demonstrate the use of important DOS commands with various switches	20
	Oral	07
	Journal	05
B8	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script to find the factorial of given number	20
	Oral	07
	Journal	05
B9	Explain with syntax , use of Following five DOS Commands	

	1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script to generate and print the arithmetic table of given number	20
	Oral	07
	Journal	05
B10	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that receives file name and informs whether it exists or not. If exists then it shall give the details of its access permission, its size, etc	20
	Oral	07
	Journal	05
B11	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that present multiple choice questions, gets the user's answer and reports back whether it is right or wrong. Finally it shall display the score	20
	Oral	07
	Journal	05
B12	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that accepts the name of a text file and finds number of sentences , number of words , number of lines and displays them	20
	Oral	07
	Journal	05
B13	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script that accepts input and then check if the input is a directory file and is readable and writable. If so then	20

	all sub directories under that directory should be listed out one by one	
	Oral	07
	Journal	05
B14	Explain with syntax , use of Following five DOS Commands 1) 2) 3) 4) 5)	10
	Explain with syntax , use of Following five UNIX Commands 1) 2) 3) 4) 5)	10
	Write a Shell script to accept two integers and a single character(+,-,*,/). Depending upon the character input , the program should perform addition, subtraction, Multiplication and division respectively.	20
	Oral	07
	Journal	05

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FACULTY OF SCIENCE
B.Sc. I Year Practical Examination

COMPUTER SCIENCE
Paper IV
Programming in C and C++ (Practical)

Time: Three Hours

Marks: 100

Note:

1. Every student must be given one question form Section A and one Question from Section B.
2. The Algorithms and Flowcharts must be correctly drawn .
3. Almost all care is taken to design the experiment through the perspective of various modules in Theory syllabus. In case of any problems, the External Examiner and Internal Examiner can give their own data and report analogously

SECTION –A (PROGRAMING IN C)

EXPT NO.	EXPERIMENT DETAILS	MARKS
A1	Write a program in C to find the sum of series from ----- to ----- using For/While/Do-While loop. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A2	Write a program in C to convert the temperature from Fahrenhiet to Degree Celsius using the formula $C=5/9*(F-32)$. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A3	Write a program in C to calculate the sum of integers in the range from ----- to -- ----- using For/While/Do-While loop. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A4	Write a program in C to find the sum of following series 1) $1+3+5+\dots+N$ 2) $1^1+2^2+3^3+4^4+\dots+N^N$. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05

A5	Write a program in C to find the average of N numbers using For/While/Do-While loop. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A6	Write a program in C to generate Fibonacci series. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A7	Write a program in C to check whether the number is Prime or not . Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A8	Write a program in C to find the largest / smallest number using an array. Initially create an array and accept----- numbers . Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A9	Write a program in C to perform addition of two matrices of dimensions---*----- . Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A10	Write a program in C to calculate factorial of a given number. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A11	Write a program in C to sort given array in Ascending and Descending order. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A12	Write a program in C to print given array in reverse order. Use the concept of	

	Pointers for it. Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A13	Write a program in C to demonstrate the use of passing pointer to function . Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A14	Write a program in C to sort demonstrate use of passing structure variable to function . Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05
A15	Write a program in C to find real roots of Quadratic Equation . Feed , Compile and Run the program	25
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	08
	Journal	05

SECTION –B (PROGRAMING IN C++)

EXPT NO.	EXPERIMENT DETAILS	MARKS
B1	Write a program in C++ to calculate the area of circle using function. The value of radius must be passed in function and the function should return area of circle. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B2	Write a program in C++ to find minimum of the two numbers using Inline Function . Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B3	Write a program in C++ to compute tax using Inline Function . This function takes two arguments – taxable income and tax percentage. Default tax percentage is 15% of taxable income . You must make provision of default argument in program Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05

	Oral	07
	Journal	05
B4	Write a program in C++ to calculate the area of triangle, area of circle and area of rectangle using function overloading. The formulae are Area of circle = $\pi * r * r$ Area of rectangle = $2 * \text{length} * \text{breadth}$ Area of triangle = $0.5 * \text{height} * \text{base}$. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B5	Write a program in C++ to perform arithmetic operations such as addition, subtraction, multiplication and division using class. You must use member function for arithmetic operations . Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B6	Write a program in C++ to read student's particulars, such as roll-number, name, marks of two subject from keyboard and display the contents of the class on the screen. Here the class " student" is to be defined as an array of objects. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B7	Write a program in C++ to declare class "clsinventory" with following members – Product code, product description, rate of product, Quantity in hand. Also declare member function funset_data() which assign a member's value and funput_data() which prints data member's value and total amount of the product for n products using class and object. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B8	Write a program in C++ to demonstrate whether a given number is prime or not and prints suing parameterized constructor. Also use destructor in the program. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B9	Write a program in C++ to overload plus(+) operator for finding	

	the sum of the two given class objects/ concatenation of two string objects . Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B10	Write a program in C++ to design a base class consisting data members like name of the patient, sex, age and another base class consisting of ward number, bed number and nature of the illness. The derived class consists of only one data member that is date of admission. Your program should display the complete information of the patient using indirect base class. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B11	Write a program in C++ using friend function to calculate and print the factorial of given number. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B12	Write a program in C++ to demonstrate the use of Virtual function . Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B13	Write a program in C++ that reads the contents of text file up to the end and display the same on the screen . Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B14	Write a program in C++ to copy the contents of a resident file onto a new text file. Both file names are required to be supplied through the keyboard. Feed , Compile and Run the program	20
	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05
B15	Write a program in C++ to create binary file for storing five records of students. Each record contains name of student and make in three subjects. Make use of structure for the purpose . Feed , Compile and Run the program	20

	Write an Algorithm and Flowchart for above program	10
	Take the print out of error free program and of the output	05
	Oral	07
	Journal	05

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FACULTY OF SCIENCE B.Sc. II Year Practical Examination

COMPUTER SCIENCE Paper VII Data Structure & Mathematical Foundation (Practical)

Time: Three Hours	Marks: 100
A-1:	
1) Write a program in c/c++ for transpose of Sparse Matrix. (Feed compile and run the program.)	25
2) Write an algorithm and flowchart for the above program.	10
3) Take the printout of error free program and its output.	05
4) Journal.	05
5) Oral.	08
A-2:	
1) Write a program in c/c++ for inserting and deleting of element from stack. (Feed Compile and run the program)	25
2) Write an algorithm and flowchart for the above program.	10
3) Take the printout of error free program and its output.	05
4) Journal.	05
5) Oral.	08
A-3:	
1) Write a program in c/c++ for evaluation of postfix expression. (Feed Compile and run the program.)	25
2) Write an algorithm and flowchart for the above program.	10
3) Take the printout of error free program and its output.	05
4) Journal.	05
5) Oral.	08
A-4:	
1) Design an algorithm and draw a flowchart for infix to Postfix conversion.	40
2) Journal.	05
3) Oral.	08
A-5:	
1) Write a program in a c/c++ for Queue insertion and deletion. (Feed Compile and run the program.)	25
2) Write an algorithm and flowchart for the above program.	10
3) Take the printout of error free program and its output.	05
4) Journal.	05
5) Oral.	08
A-6:	
1) Design an algorithm and draw a flowchart for addition of two polynomial equations.	40
2) Journal.	05
3) Oral.	08
A-7:	
1) Write a program in c/c++ for singly list insertion. (Feed Compile and run the program)	25

- | | |
|---|----|
| 2) Write an algorithm and flowchart for the above program. | 10 |
| 3) Take the print out of error free program and its output. | 05 |
| 4) Journal. | 05 |
| 5) Oral. | 08 |

A-8:

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|--|----|
| 1) Write a program in c/c++ for singly list deletion.
(Feed Compile and run the program.) | 25 |
| 2) Write an algorithm and flowchart for the above program. | 10 |
| 3) Take the printout of error free program and its output. | 05 |
| 4) Journal. | 05 |
| 5) Oral. | 08 |

A-9:

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|---|----|
| 1) Write a program c/c++ to sort an array using selection sort method.
(Feed Compile and run the program.) | 25 |
| 2) Write an algorithm and flowchart for the above program. | 10 |
| 3) Take the printout of error free program and its output. | 05 |
| 4) Journal. | 05 |
| 5) Oral. | 08 |

A-10:

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|--|----|
| 1) Write an algorithm in c/c++ to sort and array using inserting Sort.
(Feed Compile and run the program) | 25 |
| 2) Write an algorithm and flowchart for the above program. | 10 |
| 3) Take the printout of error free program and its output. | 05 |
| 4) Journal. | 05 |
| 5) Oral. | 08 |

A-11:

- | | |
|---|----|
| 1) Write a program in c/c++ to implement linear search technique.
(Feed Compile and run the program) | 25 |
| 2) Write an algorithm and flowchart for the above program. | 10 |
| 3) Take the printout of error free program and its output. | 05 |
| 4) Journal. | 05 |
| 5) Oral. | 08 |

A-12:

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|--|----|
| 1) Write a program in c/c++ for binary search.
(Feed Compile and run the program) | 25 |
| 2) Write an algorithm and flowchart for above the program | 10 |
| 3) Take the printout of error free program and its output. | 05 |
| 4) Journal. | 05 |
| 5) Oral. | 08 |

A-13:

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|--|----|
| 1) Design an algorithm and draw a flowchart for DFS. | 40 |
| 2) Journal. | 05 |
| 3) Oral. | 08 |

A-14:

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|--|----|
| 1) Design an algorithm and draw a flowchart for BFS. | 40 |
| 2) Journal. | 05 |
| 3) Oral. | 08 |

A-15:

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|--|----|
| 1) Design an algorithm and draw flowchart for Binary Tree Traversal. | 40 |
| 2) Journal. | 05 |
| 3) Oral. | 08 |

A-16:

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|--|----|
| 1) Draw NFA of given Regular Expression and also convert into DFA. | 40 |
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i) ----- ii) -----

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|-------------|----|
| 2) Journal. | 05 |
| 3) Oral. | 08 |

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Section B (DMS & Numerical Techniques)

B-1:			1)
Write a program in c/c++ using function for Bisection method.	20		
(Feed Compile and run the program)		10	
2) Write an algorithm and flowchart for the above program.			
3) Take the printout of error free program and its output.		05	
4) Journal.		05	
5) Oral.		08	
B-2:			1)
Write a program in c/c++ using function for Regula-Falsi method.	20		
(Feed Compile and run the program)		10	
2) Write an algorithm and flowchart for the above program.			
3) Take the printout of error free program and its output.		05	
4) Journal.		05	
5) Oral.		08	
B-3:			1)
Write a program in c/c++ using #define processor directives for Newton-Raphson method.		20	
(Feed Compile and run the program)		10	
2) Write an algorithm and flowchart for the above program.			
3) Make the printout of error free program and its output.		05	
4) Journal.		05	
5) Oral.		08	
B-4:			
1) Write a program in c/c++ using array for Matrix Inversion method.	20		
(Feed Compile and run the program)		10	
2) Write an algorithm and flowchart for the above program.			
3) Take the printout of error free program and its output.		05	
4) Journal.		05	
5) Oral.		08	
B-5:			
1) Write a program in c/c++ using array for Multiplication of two square matrices.	20		
(Feed Compile and run the program)		10	
2) Write an algorithm and flowchart for the above program.			
3) Take the printout of error free program and its output.		05	
4) Journal.		05	
5) Oral.		08	

B-6:

- 1) Write a program in c/c++ using array for Gauss-Elimination method. 20
(Feed Compile and run the program) 10
- 2) Write an algorithm and flowchart for the above program.
- 3) Take the printout of error free program and its output. 05
- 4) Journal. 05
- 5) Oral. 08

B-7:

- 1) Write a program in c/c++ for Trapezoidal Rule. 20
(Feed Compile and run the program) 10
- 2) Write an algorithm and flowchart for the above program.
- 3) Take the printout of error free program and its output. 05
- 4) Journal. 05
- 5) Oral. 08

B-8:

- 1) Write a program in c/c++ for Simpson's 1/3 Rule. 20
(Feed Compile and run the program) 10
- 2) Write an algorithm and flowchart for the above program.
- 3) Take the printout of error free program and its output. 05
- 4) Journal. 05
- 5) Oral. 08

B-9:

- 1) Write a program in c/c++ for Simpson's 1/8 Rule. 20
(Feed Compile and run the program) 10
- 2) Write an algorithm and flowchart for the above program.
- 3) Take the printout of error free program and its output. 05
- 4) Journal. 05
- 5) Oral. 08

B-10:

- 1) Write a program in c/c++ for Newton's General Divided Difference formula. 20
(Feed Compile and run the program) 10
- 2) Write an algorithm and flowchart for the above program.
- 3) Take the printout of error free program and its output. 05
- 4) Journal. 05
- 5) Oral. 08

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Faculty of Science

B.Sc. II Year Practical Examination

COMPUTER SCIENCE

PAPER-VIII

Microprocessor & Interfacing (Practical)

Time: 3 hours

Marks: 100

Section A (Microprocessor)

A-1:

- 1) Write an ALP using template to find SUM, DIFFERENCE and PRODUCT of two bytes stored on ML _____ & _____ respectively. Copy the result SUM in BL, DIFFERENCE in CL, and PRODUCT in DX registers respectively. 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-2:

- 1) Write an ALP using template to ADD two words _____ & _____ stored on M.L. _____ & _____ respectively. Store result on M. L. _____ 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-3:

- 1) Write an ALP using template to DIVIDE two words _____ & _____ Stored On M.L. _____ & _____ respectively. Store result on M.L. _____ 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-4:

- 1) Write an Alp using template to find average of block of data containing _____ elements. Stored on M.L. _____ 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-5:

- 1) Write an ALP using template to mask lower nibble of a block of data and store on M.L. _____ block contains bytes, store the result on M.L. _____ 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-6:

- 1) Write an ALP using template to check whether the number is positive or negative. 10
Using logic of comparison with 7 FH. If the number is negative, copy 01 H on M.L

- _____ otherwise FFH on it.
- 2) Write an algorithm and flowchart for the above program. 10
 - 3) Feed on 8086 kit, Execute & Correct result. 20
 - 4) Journal. 05
 - 5) Oral. 08

A-7:

- 1) Write an ALP using template mask lower nibble of a block of data and store on M.L. _____ block contains bytes, store the result on M.L. _____ 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-8:

- 1) Write an ALP using template to check whether given entry is present in block or not. 10
If present then load 00H on M.L. _____ otherwise 01H on it. Block contains 10 elements.
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-9:

- 1) Write an ALP using template to find the factorial of a given number. 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-10:

- 1) Write an ALP using template to exchange lower nibble with upper nibble of block of data 10
using ROL/ROR instruction. Block contain 10 elements.
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

A-11:

- 1) Write an ALP using template to find the minimum/maximum number in the series. 10
- 2) Write an algorithm and flowchart for the above program. 10
- 3) Feed on 8086 kit, Execute & Correct result. 20
- 4) Journal. 05
- 5) Oral. 08

- A-12:**
- 1) Write an ALP using template to add two numbers stored on M.L. _____ and _____ Using procedure. 10
 - 2) Write an algorithm and flowchart for the above program. 10
 - 3) Feed on 8086 kit, Execute & Correct result. 20
 - 4) Journal. 05
 - 5) Oral. 08

- A-13:**
- 1) Write an ALP using template to exchange contents of AX and BX registers without using MOV and XCHG instructions. 10
 - 2) Write an algorithm and flowchart for the above program. 10
 - 3) Feed on 8086 kit, Execute & Correct result. 20
 - 4) Journal. 05
 - 5) Oral. 08

- A-14:**
- 1) Write an ALP using template to convert BCD number to HEX. 10
 - 2) Write an algorithm and flowchart for the above program. 10
 - 3) Feed on 8086 kit, Execute & Correct result. 20
 - 4) Journal. 05
 - 5) Oral. 08

- A-15:**
- 1) Write an ALP using template to PUSH/POP all the register contents in stack & examine it. 10
 - 2) Write an algorithm and flowchart for the above program. 10
 - 3) Feed on 8086 kit, Execute & Correct result. 20
 - 4) Journal. 05
 - 5) Oral. 08

Section B (Interfacing)

- B-1:**
- 1) Draw the Logic Diagram/Block Diagram to interface a 4:16 decoder for address decoding To common bus. 05
 - 2) Write an ALP using template. 10
 - 3) Draw the flowchart for the above program. 05
 - 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
 - 5) Journal. 05
 - 6) Oral. 07

- B-2:**
- 1) Draw the Logic Diagram/ Block Diagram to interface 8-bit LED panel to port A, B and C of 8255 for binary up/down counter. 05
 - 2) Write an ALP using template. 10
 - 3) Draw the flowchart for the above program. 05
 - 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
 - 5) Journal. 05
 - 6) Oral. 07

- B-3:**
- 1) Draw the Logic Diagram/ Block Diagram to interface 8 switches and LED Panel to display the status of the switches. 05

- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-4:

- 1) Draw the Logic Diagram /Block Diagram to interface 8254 in _____ modes. 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-5:

- 1) Draw logic Diagram/ Block Diagram to interface printer. 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-6:

- 1) Draw the Logic Diagram / Block Diagram to interface 7 segment display (without multiplexing) 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-7:

- 1) Draw the Logic Diagram / Block Diagram to interface 7 segment display in multiplex mode 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-8:

- 1) Draw the Logic Diagram / Block Diagram to interface 7 segment display to display the number from 0 to F 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-9:

- 1) Draw the Logic Diagram/ Block Diagram to interface DAC to generate Square wave forms/saw tooth wave forms/step wave forms. 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15

- 5) Journal. 05
- 6) Oral. 07

B-10:

- 1) Draw the Logic Diagram/ Block Diagram to interface ADC for data acquisition system. 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-11:

- 1) Draw the Logic Diagram / Block Diagram to interface Stepper Motor. 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-12:

- 1) Draw the Logic Diagram / Block Diagram to interface the RAM in memory mapped mode (1 K x 8). 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

B-13:

- 1) Draw the Logic Diagram / Block Diagram to interface the EPROM in memory mapped mode (14 x 8). 05
- 2) Write an ALP using template. 10
- 3) Draw the flowchart for the above program. 05
- 4) Interfacing and Feed on 8086 kit, Execute & Correct result. 15
- 5) Journal. 05
- 6) Oral. 07

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

FACULTY OF SCIENCE
B.Sc. III Year Practical Examination

COMPUTER SCIENCE
Paper XI
DBMS and Data Communications (Practical)

Time: Three Hours

Marks: 100

Mini Project 1 (Based on Section A of Paper-IX) Marks : 50

Mini Project should involve concepts of DBMS with latest front end tools like VB/ VB .NET / D2K / Delphi / Power Builder and back end tools like MS-SQL Server / Oracle / MS-Access / Ingress / Postgress / SyBase.

Summary of the Project	10
Annual Work Presentation	20
Oral	20

Mini Project 2 (Based on Section B of Paper-IX) Marks : 50

Projects based on following topics (Case Study)

1. Study of Connectivity devices & transmission media.
2. Study of Internet Protocol.
3. E-mail and E-mail protocols (SMTP, POP). Creating e-mail accounts.
4. Study of Networks Security (Cryptography)
5. Cased study of Internet hardware/software configuration. DNS, Installing modem, establishing dial up connections.
6. Study of Servers: LAN, Novell Netware/windows NT/ Windows 2000.
7. Study of Search engines (Alta Vista/ Google/Yahoo/Lycos/Hot-bot/Khoj)
8. Chat Groups: Chatting using chat software like rediffbol, yahoo messenger etc.

Summary of the Project	10
Annual Work Presentation	20
Oral	20

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FACULTY OF SCIENCE
B.Sc. III Year Practical Examination

COMPUTER SCIENCE

Paper XII

Optional (Practical)

Time: Three Hours

Marks: 100

Major Project (Based on Optional)

Summary of the Project	20
Annual Work Presentation	40
Oral	20
Seminar Report	10
Presentation	10