

JAWAHAR LAL NEHRU COLLEGE BHOPAL

TIME 3 HOUR

MARKS: 85

ASSIGNMENT

2020-2021

Paper code MSC-101

I-SEM (Regular/ex/atkt)

M.Sc. (Computer Science)

Discrete Mathematics Structures

Short Questions solve all Two

- 1- Explain languages and Grammar over an alphabet with notations and example.

संकेतों तथा उदाहरण सहित एक वर्णमाला पर भाषा तथा व्याकरण की व्याख्या कीजिए

- 2- What do you mean by sets? Explain their types and Operations.

समुच्चयों से आप का तात्पर्य क्या है उनके प्रकारों तथा संक्रियाओं की व्याख्या कीजिए

- 3- Prove that the set $\{0,1,2,3\}$ is a group under addition modulo 4 as the composition.

सिद्ध कीजिए $\{0,1,2,3\}$ कि समुच्चय रचनाओं के रूप में योग माड्यूलो 4 के अधीन एक समूह है

Long Questions solve any Three

- 1- Show that the set of cube roots of unity is an abelian group with respect to multiplication.

दिखाए कि एक तत्व के घन मूल्यों का समुच्चय गुणन के संदर्भ सहित एक अबेलियन समूह है

- 2- Using truth table, prove that

$$\sim(p \vee q) \Leftrightarrow (\sim p) \wedge (\sim q)$$

- 3- Prove that

$$A \times (B \cup C) = (A \times B) \cup (A \times C)$$

- 4- Every Homomorphism image of group G isomorphic to some quotient group of G

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Paper code MSC-102

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M.Sc. (Computer Science)

Programming skills with C++

1. Which of the following is not a keyword of 'C++'?
(A) auto (B) case (C) break (D) function
2. Which is the only function that all C program must contain?
(A) start() (B) system() (C) main() (D) scanf()
3. The operator "++" is known as _____ operator.
4. The _____ operator can be used to determine the length of array and structures.
5. The standard mathematical functions are included in the _____ header file
6. explain Oop's in c++?
7. Difference between constructors and Destructors
8. Explain data type in c++ language?
9. Explain control statement with example?
10. Write a program sum to number?
11. How to define function in c++ language?
12. What is pointer in c++ language?

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Paper code MSC-104

I-SEM (Regular/ex/atkt)

M.Sc. (Computer Science)

Office Tools

Not:-solve Any Ten

- 1- Explain MS window with diagram?
- 2- How to use CUT, COPY,PAST,REPLACE & PRINT commands?
- 3- What is clip Arts?
- 4- how can you replace a text in a word document
- 5- what is suitable cell difference
- 6- what is electronic spreadsheet
- 7- what is IP address
- 8- what is DNS
- 9- what do you mean by network
- 10- How can you add a new slide in a presentation
- 11- Explain the important protocol is related with internet
- 12- Explain the step to insert footer in word document
- 13- what are the different font style in ms word
- 14- write a note on slide transactions and slide animations
- 15- what is client server computing
- 16- List out the mathematical functions available in excel

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Paper code MSC-103

I-SEM (Regular/ex/atkt)

M.Sc. (Computer Science)

Computer Organization & Architecture

Not:-Solve All Question

- 1- Explain full adder with logic diagram
- 2- What is Number system? Explain Binary, Octal, Hexadecimal
- 3- Explain BCD codes?
- 4- Explain Block Diagram of computer
- 5- Explain Basic logic gates
- 6- Simplify the following Boolean function using Karnaugh map method
$$F = \bar{A}.\bar{B} + A.\bar{B} + A.B$$
- 7- Define flip flop explain the working of SR FF with logic diagram
- 8- Simplify the Boolean function using for variables math in sum of product form also draw the circuit diagram of the simplified equation
- 9- Difference between
 - MICRO PROGRAM AND HARDWARE CONTROLLERS
 - SRAM VS DRAM
- 10- Define cluster explain different plus string method in detail

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Paper Code: MSCS-106

Lab II (Office Tools)

Max.Marks: 50

Suggested List of Practicals

I. System Tools & MS Word

- ① Usage of System Tools(Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information, System Monitor, Disk Cleanup etc.)
- ② Printing documents with even-odd pages on both sides on a network printer.
- 3) Revision of basic tools of MS-Word.
- 4) Implementing Newspaper Style Column, Drop Cap.
- ⑤ Use of Header & Footer, Endnote and Footnote
- ⑥ Learning to manage page breaks and section breaks
- 7) Inserting Objects, Hyperlinks, Cross reference, Bookmark, Illustrations, symbols, signature & equations, watermark.
- 8) Mail Merge, printing labels and envelopes, Mathematical Calculations, Using Macros.
- 9) Table Handling, Creating Table of Contents & Index.
- 10) Protecting documents.

II. MS Excel

- ① Revision of basic formulae of MS-Excel.
- 2) Protecting cells, worksheet and workbook
- ③ Applying Sort & Filter, Data Validation, Conditional Formatting
- 4) Formulae: and, or, if, sumif, sumifs, countif, countifs
- 5) Implementing Pivot Table

III. MS Powerpoint

- ① Adding animation to slide, Custom Animation, Slide Transition
- ② Creation of Photo Album, with automatic transition of slides in 10 seconds with loopback on end
- 3) Creation of presentation with continuation of single audio during whole presentation(despite of slide change)
- 4) Printing using Handouts

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Paper Code: MSCS-105 Lab I (C++ Programming)

Max.Marks: 50

Suggested List of Practicals

1. Define a STUDENT class with Roll No., Name, and Marks in 3 tests of a subject. Declare an array of 10 STUDENT objects. Using appropriate functions, find the average of the two better marks for each student. Print the student details.
2. Write a volume function which calculates the volume of sphere, rectangle and cylinder using function overloading.
3. Write a program to find roots of Quadratic equation ,displaying the answer, whether roots are equal ,real or complex..
4. Write a C++ program to demonstrate private, public and protected access specifiers.
5. Write a program to implement single and multiple level inheritance.
6. Write a C++ program to create a class called COMPLEX and implement the following overloading functions ADD that return a complex number:
 - (i) ADD(a, s2) – where 'a' is an integer (real part) and s2 is a complex number
 - (ii) ADD(s1, s2) – where s1 and s2 are complex numbers
7. Write a C++ program to create an ACCOUNT class which has a parameterized constructor for inputting values of account number, name and balance. Class should also contain three more functions-Deposit for adding amount, Withdraw for subtracting amount(if account balance is more than withdrawal amount)and Print_Details for printing the whole account details.
8. Write a C++ program to create a template function for sorting of integers and doubles.
9. Write a C++ program to create a class called STUDENT with data members Roll No., Name and Age. Using inheritance, create the classes UGSTUDENT and PGSTUDENT having fields as Semester, Fees and Stipend. Enter the data for at least 5 students. Find the semester-wise average age for all UG and PG students separately.
10. Write a program to create a file and then write some text into the file through C++ program.
11. Write a C++ program to write and read values using variables in/from file.
12. Write a C++ program to write and read object using read and write function.
13. Write a program implementing basic operation of class ios i.e. setf, unsetf, precision etc.
14. Write a program to implement I/O operations on characters. I/O operations includes inputting a string, Calculating length of the string, Storing the string in a file, fetching the stored characters from it, etc.
15. Write a program to copy the contents of one file to another.
16. Write a program to perform read/write binary I/O operation on a file (i.e. write the object of a structure/class to file).
17. Write a program to maintain elementary database of students using files.

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NOTE : सभी स्टूडेंट को प्रैक्टिकल फाइल्स बनाना अनिवार्य है फाइल्स की अनुपस्थिति में प्रैक्टिकल में अनुपस्थित माना जाएगा अतः सभी स्टूडेंट असाइनमेंट के साथ फाइल को पूर्ण करके कॉलेज में सबमिट करें ।