

## MCA – I (Sem-I)

<b>Practical – I (C++)</b>	
1	Write DOS Copy command to copy the data of one file to another file.
2	Find the factorial of given Number using Command Line argument
3	Create Random file and Append Record, Update Record, Add Record and List record form file
4	Count the words, characters, lines in a text file using command line arguments
5	Demonstrate the virtual and Pure virtual function in C++
6	Demonstrate the user of this pointer.
7	Overload Unary operator with Member function ++, --
8	Overload Unary operator with Friend function ++, --
9	Overload Binary Operator with Member function +, *, <
10	Overload Binary Operator with Friend function -, /, >
11	Create Mark sheet using multilevel Inheritance
12	Create Employee Selection process using Multiple Inheritance
13	Find area of triangle, square and circle Using method overloading
14	Copy the constructor using default arguments
15	Compare two values using Friend function
16	Find the date difference between two dates using Object as argument and return object
17	Overload + operators to add two strings using friend function
18	Find second largest and second smallest number from given array of N Elements
19	Find Palindrome number between 101 to 500
20	Find the factor's of a given number entered by the user
21	Find the sum of digit and reverse the digit
22	Demonstrate the call by value, Call by reference and reference variable
23	Calculate the series $1! + 2! + 3! + \dots N!$
24	Print Fibonacci series of n number
25	Print prime series from 1 to 50

<b>Practical – I (DEM)</b>	
1	To print 'A'.
2	To print 'A' 15 times.
3	To print the following series- 0 1 2 3 4 5 6 7 8 9.
4	To print A to Z with tab.
5	To clear the entire screen.
6	To print the following message WEL COME TO INDIA.
7	To find the addition of two numbers (16 bit).
8	To find the subtraction of two numbers (16 bit).
9	To find the multiplication of two numbers (16 bit).
10	To find the division of 16 bit number with 16 bit divisor.
11	To find the average of two numbers.
12	To find the largest number between two numbers.
13	To move data block from one location to other without overlap.

14	To move data block from one location to other with overlap.
15	To find smallest number from an array.
16	To find largest number from an array.
17	To find the sum of 10 even numbers.
18	To find the sum of 10 natural numbers.
19	To find the sum of 10 odd numbers
20	To derive a formula $(A+B)-(D+E)$ .
21	To derive a formula $((A*B)+(C*D))-(E/F)$ .
22	To generate the Fibonacci series.
23	To find factorial of any number.
24	To multiply two ASCII byte numbers.
25	To find LCM of two 16 bit unsigned integers.
26	To find GCF of two 16 bit unsigned integers.
27	To sort a given set of 16 bit unsigned integers into ascending order using insertion sort.
28	To sort a given set of 16 bit unsigned integers into ascending order using bubble sort.
29	To generate prime numbers from 1 to 50 BCD.
30	To transfer given source string to destination string using string instructions.
31	To perform reverse of a string.
32	To delete a word from a string.
33	To searching a word from a string.
34	To check a given string is palindrome or not.
35	To display ASCII character set.
36	To multiply two matrices.
37	To find trace of a matrix.
38	To find the norms of the matrix.
39	To search that implements binary search algorithm.
40	To add 2-digit BCD numbers.
41	Graphics editor with mouse interface.
42	Handling File Manager.

### MCA – II (Sem-I)

<b>Practical – (OR)</b>	
Sr. No	
1	Program to demonstrate North West Corner Method.
2	Program to demonstrate Least Cost Method.
3	Program to demonstrate Vogel's Approximation Method.
4	Program to demonstrate Row Minima Method.
5	Program to demonstrate Column Minima Method.

6	Program to find Job Assignments using Hungerian Method.
7	Program to find Value of Game if there is Saddle Pont.
8	Program to find Value of Game if there is no Saddle Pont.
9	Program to find Value of Game using Dominance Property.
10	Program to find decision under Uncertainty using MAXIMIN criteria.
11	Program to find decision under Uncertainty using MINIMAX criteria.
12	Program to find decision under Uncertainty using MAXIMAX criteria.
13	Program to find decision under Uncertainty using MINIMIN criteria.
14	Program to find decision under Uncertainty using LAPLACE criteria.
15	Program to find decision under Uncertainty using HURWICZ criteria.
16	Program to find decision under Uncertainty using SAVAGE criteria.
17	Program to find decision under Risk using EMV criteria.
18	Program to find decision under Risk using EVPI criteria.
19	Program to find EOQ without shortage
20	Program to find EOQ with shortage
21	Program to find EOQ with price break

**Practical – (DBA)**

Sr. No																										
1	<p>Write a sql query to create sal_order table as follows:</p> <table border="1"> <thead> <tr> <th>Sr No</th> <th>column_name</th> <th>data type</th> <th>attribute</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>sal_order_name</td> <td>varchar2(6)</td> <td>primary key</td> </tr> <tr> <td>2</td> <td>pro_no</td> <td>varchar2(6)</td> <td>primary key</td> </tr> <tr> <td>3</td> <td>qty_disp</td> <td>number(8)</td> <td></td> </tr> <tr> <td>4</td> <td>pro_rate</td> <td>number(8,2)</td> <td></td> </tr> </tbody> </table> <p>a) Add column order_delay as unique.  b) Describe table structure of sal_order.  c) Update qty_order of eight record.  d) Display all records of table.</p>	Sr No	column_name	data type	attribute	1	sal_order_name	varchar2(6)	primary key	2	pro_no	varchar2(6)	primary key	3	qty_disp	number(8)		4	pro_rate	number(8,2)						
Sr No	column_name	data type	attribute																							
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4	pro_rate	number(8,2)																								
2	<p>Write a sql query to create emp_master as follows:</p> <table border="1"> <thead> <tr> <th>Sr No</th> <th>column_name</th> <th>data type</th> <th>size</th> <th>attribute</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>emp_no</td> <td>varchar2</td> <td>10</td> <td>emp_no start with A</td> </tr> <tr> <td>2.</td> <td>name</td> <td>varchar2</td> <td>10</td> <td>emp_name is in capital letter</td> </tr> <tr> <td>3.</td> <td>city</td> <td>varchar2</td> <td>10</td> <td>emp_city is Nagpur,pune,nashik</td> </tr> <tr> <td>4.</td> <td>sal</td> <td>number</td> <td>8,2</td> <td>emp_sal&gt;1000</td> </tr> </tbody> </table> <p>a) Describe structure and insert 10 records.  b) Display Employee information for all employee in city Pune or Nagpur.  c) Display Employee information where emp_sal&gt;10000 and emp_sal&lt;=20000.  d) Display emp_name where first two char of emp_name are 'ja'.  e) Change emp_name to 'vijay' where emp_no is 'A001'.</p>	Sr No	column_name	data type	size	attribute	1.	emp_no	varchar2	10	emp_no start with A	2.	name	varchar2	10	emp_name is in capital letter	3.	city	varchar2	10	emp_city is Nagpur,pune,nashik	4.	sal	number	8,2	emp_sal>1000
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	1	emp_no	varchar2	10	emp_no start with A or P
	2	emp_name(f,m,l)	Name_TY		
	3	address	varchar2	20	
					<ul style="list-style-type: none"> <li>a) Modify address column to include Not Null constraint</li> <li>b) Add city column as it must keep city Mumbai, Delhi and Madras</li> <li>c) Add sal column to check sal &gt; 20000.</li> <li>d) Describe structure and insert 10 records.</li> <li>e) Display Employee information for all employee in city Mumbai or Madras.</li> <li>f) Display Employee information where emp_sal &gt; 20000 and emp_sal &lt; 40000.</li> <li>g) Display emp_name where first char of emp_name are 'P'.</li> <li>h) Change salary where emp_no is 'P001'.</li> </ul>
4	Write sql query to create a sal_ord_detail table				
	Sr No	column_name	data type	size	attribute
	1.	sal_ord_detail	varchar2	6	primary key
	2.	prod_no	varchar2	6	primary key, foreign references
	product_master.				
	3.	qty_ord	number	8	
	4.	qty_disp	number	8	
	5.	prod_rate	number	8,2	Not Null
					<ul style="list-style-type: none"> <li>a) Drop foreign key constraint on column prod_no in table sal_order_detail</li> <li>b) Add foreign key constraint on column sal_ord_no in table sal_ord_detail referencing table sal_ord.</li> <li>c) Modify column qty_ord to include notnull constraint.</li> <li>d) Insert 10 records in the table sal_ord_detail</li> <li>e) Display prod_no and total of qty_ord for each product.</li> <li>f) Display prod_no and total of qty_ord for each product p001 condition can be imposed on group by clause using having.</li> </ul>
5	Write sql query create employee table as follows:				
	Sr No	column_name	data type	size	attribute
	1	Emp_no	varchar2	10	primary key
	2	name	varchar2	20	not null
	3	address	varchar2	40	not null
	4	city	varchar2	20	not null
	5	pin_code	number	10	not null
	6	salary	number	10	not null
	7	jn_date	date		
					<ul style="list-style-type: none"> <li>a) Find out emp_name where sal is between 1000 and 1500</li> <li>b) Find out emp_name where sal is not between 1000 and 1500</li> <li>c) Find out emp_name where first char of emp name is 'SA'</li> </ul>

	<p>d) Find out emp_name whose second char of name is 'U' or 'A'</p> <p>e) Find out emp_name having three char long name and first two char are 'AN_'</p> <p>f) Find emp_name sunil,anup,sachin.</p> <p>g) Change date of emp 'emp_no 902' to '24 aug 2002'</p>
6	<p>Write sql query to create index on table client_master on its field client_no.</p> <p>a) Drop index on the table client_master.</p> <p>b) Select the data set from view where city is in madras or delhi.</p> <p>c) Destroy view.</p>
7	<p>Write an sql query to create client_master with fields client_name, address,city,pincode</p> <p>a) Insert 10 record</p> <p>b) Create index on client master</p> <p>c) create view on client master</p> <p>d) Select column client_no,client_name,city where city belongs to delhi or nagpur</p> <p>e) Drop the index on the table client_master.</p>
8	<p>Write create a sequence seq_order which will start generate number from 1 to 9999 in ascending order with an interval of 1 in cycle order.</p> <p>a) Display next value of sequence seq_order</p> <p>b) Display current value of sequence seq_order</p> <p>c) Insert value in sal_order table must be generated using seq_order sequence.</p> <p>d) Display all records of sal_order table.</p> <p>e) Change the caching of 50 seq_order sequence having interval 2.</p> <p>f) Drop sequence</p>
9	Write pl/sql program to check whether a given number is prime or not.
10	Write pl/sql program to generate Fibonacci series of given number.
11	Write a PL/SQL program to reverse the given number using for loop string.
12	Write a pl/sql program to change the sale_price of product_master table where pro_no is c0001 and insert the record with date on which price was change last in new master table whose fields are prod_no,date,sale_price.
13	Write PL/SQL program as follows: Determine how many 40 GB HDD are left in the stack if quantity is available in the stock decrease quantity by 1 stored that 40 GB HDD was purchase on a certain date if the stock is not available store the fact that there are no more 40 GB HDD available for sell on that date.
14	Write PL/SQL program to accept the employee whose job is programmer and update the salary of that employee. Display how many rows are affected.
15	Write pl/sql program to display the name, dept_name and salary of the 1st 10 Employee getting the highest salary using explicit cursor.
16	Write a PL/SQL Program to check whether emp_no of employee exist or not, using Procedure.
17	Write a program to reverse of a giving number using function.
18	Write a SQL query to create tablespace datauser or data where size of the file 100mb extend it by 10mb reach up to 250mb in size. Create user dataone with default tablespace and temporary tablespace. create role acc_create with create

	session, create user, alter user and assign role to user.assign profile to user where user should fail after five attempts and valid for three days. Destroy user dataone and tablespace from system.
19	Write a program to print ASCII table.
20	Write a PL/SQL code to accept the text and 1. Reverse the given text 2. check the text is palindrome or not
21	Write a SQL query to illustrate character manipulation function.
22	Write a SQL query to illustrate date function
23	Write a SQL query to illustrate the group function. 1. MIN      2. MAX      3. AVG      4. COUNT      5. SUM
24	Write a SQL query to illustrate numeric function. 1. ROUND   2. MOD   3. CONCAT   4. CEIL   5. FLOOR   6. POWER 7. SQRT
25	Write a SQL query for equi_join, outer join , self_join, cartesian_join.
26	Write a pl/sql program to raise the sale_price 5% of product_master table where pro_no is c0001 and insert the record with date on which price was change last in new master table whose fields are prod_no,date,sale_price using explicit cursor.

### MCA – III (Sem-I)

<b>Practical – I (ASP.NET)</b>	
Sr. No	
1	HTML page creation and using the markup for formatting and presenting the content on browser.
2	JavaScript adding to the page and client side interaction.
3	Use of CSS and in-line styling in the webpage.
4	Date Time object usage and demonstration of handling the calendar control for getting the date time objects and its method manipulations. Necessary typecasting is also to be performed.
5	Acquaintance with the VS.NET IDE and basic page creation along with navigation to the other pages existing in the web folder. Also knowing all types of web controls available in ASP.NET.
6	Installing IIS (Internet Information Services) and creation of virtual directories along with setting the permissions on them. Accessing the webpage's from the local host attribute and other features.
7	Knowing with the Asp menu control and setting with its properties for navigation in a site & usage of other important controls like MultiView etc.
8	Master page concept and its practical implementation in the derived webpage's. Knowing the advantages it offers over the traditional method of webpage development.

9	Practical implementation of Delegates and Events creation using Delegates.
10	Web.config file settings and its usages in the web applications. Global.asax file events and its general usages.
11	Creation of a simple applet.
12	Currency convector practical.
13	HTML Server controls and their implementations practical
14	Web controls and their implementations practical
15	Autopostback property feature understanding with the use of Dropdown list, Checkbox etc.
16	Page lifecycle and checking with sequential calling of page events exclusively.
17	Validation controls and their practical implications in WebPages.
18	State management feature in Asp.Net with usage of View State, Cookies, Query string, Sessions & Application objects. Also knowing when to use what object considering some test situations.
19	Trace feature, Trace logging and Page tracing.
20	Exception handling in pages. Throwing some customized exceptions.
21	Creating the components and using the database components.
22	Using the COM based components in ASP.NET and intrinsic features provided in dot net for it.
23	Creation of User Controls and their utilization in pages.
24	Deriving the custom controls from the dot net classes.
25	Caching and performance tuning feature in ASP.NET and data caching.
26	Forms authentication, windows authentication mechanisms and impersonation in Asp.Net
27	Connecting to the database with ADO.NET
28	Data Binding of dataset to the Grid View.
29	Files and Directory creations using Dot net, Mail sending using the Dot net classes.
30	Dynamic images uploading by the user using File Upload control and setting the profile image by the user in a website.

<b>Practical – II (NS/ES/DM)</b>	
Sr. No	<b>Network Security(Theory Question)</b>
1	What is Key Distribution? Explain automatic Key Distribution for connection oriented protocol.

2	What is Cryptography? Explain the classification of security services.
3	What is Conventional Encryption? Explain with Feistel Cipher Structure
4	What is Block Cipher? Explain its different modes of operation.
5	Explain the concept of Message Digest. How it is implemented?
6	Write and explain Diffie-Hellman key exchange algorithm with its structure.
7	Define viruses. How it goes through different stages? Explain with its structure.
8	What is Intrusion Detection? Explain statistical anomaly detection approach in Intrusion Detection.
9	What do you mean by confidentiality attack? Explain its potential location.
10	What is an Integrity? How is it useful in Network Security? Explain.
11	Explain Chinese remainder theorem with example.
12	Discuss the process and delivery mechanism of Non-repudiation.
13	What do you mean by firewall configuration? Explain its three configuration.
14	What are firewalls? Explain with its Design principles.
15	What is packet filtering? How is packet filtering achieved?
16	What are the authentications? What are the advantages of authentication?
17	Discuss the monitoring and management of e-mail security.
18	Explain PGP Message generation and reception with neat diagram.
19	Explain Network management in brief.
20	What is secure electronic Transaction (SET)? Explain credit card payment processing supported by SET transaction for following in detail. 1) Payment request 2) Payment authentication.
21	What is IP Security? Explain two protocols of IP Security.
22	Explain client server authentication system.
Sr. No	<b>Data Mining (Theory Question)</b>
1	Data warehousing in state government.
2	Data warehousing for ministry of commerce
3	Data warehousing in Hewlett-Packard.
4	Data warehousing in World Bank.

### MCA – I (Sem-II)

<b>Practical – (JAVA)</b>	
Sr. No	
1	Write a java program to print the Fibonacci series using array.
2	Write a java program using method overloading where class overload contain two methods. i) To find the factorial .ii) Swapping three variables without using fourth variable
3	Write a java program to determine sum of series( $S=1+1/2!+1/3!+.....n$ ).
4	Write a java program to define an integer stack that can push at least ten elements on to stack and pop from stack using constructor.

5	Write a java program to illustrate object reference variable.
6	Write a java program passing parameter to an applet.
7	Write a java program to count and display eleven features of java using command line argument.
8	Write a java program to find the greatest number among five variables using nested if else statement.
9	Write a java program to demonstrate final, static and this keyword.
10	Write a java program to illustrate exception handling using try, catch, finally, throw & throws keywords.
11	Write a java program to create multiple threads extending Thread class.
12	Write a java program to demonstrate call by value & call by reference in single program.
13	Write a java program to create a thread using Run able interface.
14	Write a java program to wait for thread to finish Using Runnable Interface.
15	Write a java program to illustrate interface.
16	Write a java program to find out even, odd & factorial number using inheritance.
17	Write a java program to demonstrate super class variable can reference sub class variable.
18	Write a java program to sort an array and insert the sorted element in array.
19	Write a java program for method overloading & over riding using inheritance
20	Write a java program to demonstrate reference variable of abstract class.
21	Write a java program for exception handling with multiple catch statement.
22	Write a java program to demonstrate user defined exception using exception class.
23	Write a java program to create multiple thread by implementing runnable interface.
24	Write a java program to illustrate thread priority.
25	Write a java program to create banner using applet class and runnable interface.
26	Write a java program to demonstrate URL connection.

<b>Practical – (DS/Stat)</b>	
<b>Sr. No</b>	<b>Data structure Practical list</b>
1	Write program. to insert an element and delete element in a linear array.
2	Write program to create link list.
3	Write program to delete a node from the link list.
4	Write program to create stack & also apply push & pop operation.
5	Write program to perform insertion & deletion operation in queue.
6	Write program to convert infix to postfix notation.
7	Write program to convert infix to prefix notation.
8	Write program to evaluate postfix expression.
9	Write program to generate Fibonacci series, using recursive procedure.

10	Write program to calculate GCD using recursion.
11	Write program to tower of Hanoi.
12	Write program to calculate sum of digit using recursion.
13	write program for Binary Searching.
14	Write program to Quick sort the elements in array.
15	Write program to Bubble sort the elements in array.
16	Write program to Insertion sort the elements in array.
17	Write program to Merge sort the elements in array.
18	Write program for Preorder Traversing in Tree.
19	Write program for In order Traversing in Tree.
20	Write program for Post order Traversing in Tree

### MCA – II (Sem-II)

<b>Practical – (CG)</b>	
Sr. No	
1	A program in CG to Draw Polygon.
2	A program in CG to draw and Fill Polygon.
3	A program in CG to Rotate Polygon with the angle 90.
4	A program in CG to Translate Polygon for X axis.
5	A program in CG to Scale Polygon for X and Y axis.
6	A program in CG to create analog clock with arbitrary
7	A program in CG to draw Line using DDA algorithm.
8	A program in CG to draw Line using Bresenham's Algorithm.
9	A program in CG to draw Circle using DDA algorithm.
10	A program in CG to zoom the specific area using Windowing.
11	A program in CG to hit the target using animation.
12	A program in CG to Clip inner Objects.
13	A program in CG to Clip Outer Objects.
14	A program in CG to Create view port.
15	A program in CG to move ball randomly on different Area
16	A program in CG to create Line Graph for month and sales of product
17	a program in CG to create bar Graph for month and sales of product
18	A program in CG to create Pie Graph for month and sales of product
19	A program in CG to Translate Polygon for Y axis
20	A program in CG to Translate Polygon for X and Y axis.
21	A program in CG to Rotate Polygon with the angle 180.
22	A program in CG to Scale Polygon for X axis
23	A program in CG to Scale Polygon for Y axis
24	A program in CG to reflect object in the $Y = -X$ Axis
25	A program in CG to reflect object in the $Y=X$
26	A program in CG to reflect object in the origin
27	A program in CG to reflect object in the X Axis
28	A program in CG to reflect object in the Y Axis

**Practical – (C#)**

Sr. No	
1	A program in C# to remove all duplicate numbers from an array list.
2	A program in C# to perform set operation.
3	A program in C# to find out least common factor using ref keyword.
4	A program in C# find largest and second largest using out keyword.
5	A program in C# sort elements using jagged array.
6	A program in C# to Encrypt and decrypt the string using single password id.
7	program in C# to Encrypt and decrypt the string using multiple password id.
8	A program in C# to create user dictionary.
9	A program in C# to create login form and check user id.
10	A program in C# to print employee details using override method.
11	A program in C# to create program that detect system Exception.
12	A program in C# to create file and read data from file.
13	A program in C# to copy the contain from one file to another file.
14	A program in C# to fire click event.
15	A program in C# to overload unary operators
16	A program in C# to create and implement a delegate.
17	A program in C# to overload binary operators
18	A program in C# to implement multiple interfaces.
19	A program in C# to design the mark sheet of MCA student using multilevel inheritance
20	A program in C# to implementation of an indexer.
21	A program in C# to implementing a property
22	A program in C# to implementing multicast delegates
23	A program in C# to fire focus event.
24	A program in C# to multiple implementation of an interface.
25	A program in C# to read data form database
26	A program in C# to store data into database
27	A program in C# to set number validation for data.