Computer Lab – Practical Question Bank

FACULTY OF COMMERCE, OSMANIA UNIVERSITY

B.Com (Computer Applications) (CBCS)-II Semester

Programming with C & C++

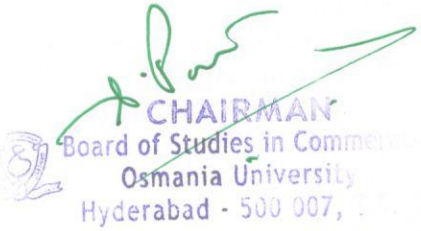
Time: 60 Minutes

Record	**10**
Skill Test	**15**
Viva-Voce	**10**
Total Marks	**35**

1. Draw a flow chart to calculate the Net Profit of a business after deducting expenses and a 5% tax from Gross Revenue.
2. Write an algorithm to determine if a company's yearly budget has been exceeded based on monthly spending.
3. Identify which of the following are invalid variable names in C and explain why: 2nd_salary, total amount, _discount, return.
4. Write a program to display the size (in bytes) of int, float, char, and double on your system.
5. Create a "Business Profile" program that uses the basic structure of C to print a company's name, year of establishment, and turnover.
6. Write a program to calculate the "Price to Earnings (P/E) Ratio" given the Market Price and Earnings Per Share.
7. Create a program that uses logical operators to check if a business qualifies for a loan (Criteria: Revenue > 500,000 AND Years in Business > 2).
8. Show an example of implicit and explicit type conversion by converting a double unit price into an int for a simplified receipt.
9. Write a program to print a professional invoice header using escape sequences like \t (tab) and \n (newline).
10. Use #define to create a constant for the GST rate (e.g., 18%) and calculate the final price of a product.
11. Write a program that prints "Reorder Required" if the stock level of a product falls below 10 units.
12. Create a program to check if a transaction amount is "Large" (over 50,000) or "Small" (under 50,000).
13. Develop a tax calculator that applies 0% tax for income < 2.5L, 5% for 2.5L–5L, and 10% for > 5L.

CHAIRMAN.
Board of Studies in Commerce
Osmania University
Hyderabad - 500 007.

14. Build a "Discount Menu" where a user enters a code (A, B, or C) to see the discount percentage for different membership tiers.
15. Write a loop that prints invoice numbers from 1 to 10 but uses continue to skip number 4 (a cancelled invoice).
16. Create a "Savings Goal" program that adds a monthly deposit to a balance until the balance reaches 10,000.
17. Write a program that repeatedly asks a cashier to enter sales figures until they enter '0' to exit.
18. Use a for loop to calculate the "Compound Interest" over a period of 5 years.
19. Write a program to print a "Sales Matrix" (e.g., a 3x3 grid) representing sales of 3 products over 3 months.
20. Demonstrate the goto statement by creating a simple error-handling jump that displays "Invalid Input" and terminates the program.
21. Declare a function calcDiscount and explain why the prototype is placed before the main() function.
22. Write a function calculateTotal that takes quantity and price as arguments and returns the total value.
23. Write two versions of a program to update an "Inventory Count"—one using call by value and one using call by reference (pointers).
24. Use built-in functions from math.h to find the square root of a company's variance in sales.
25. Store the daily sales of one week in an array and write a program to find the total weekly sales.
26. Demonstrate that arrays are zero-indexed by accessing the first and last elements of a "Price List" array.
27. Create a 2x2 matrix to store the marks of 2 students in 2 different accounting subjects.
28. Write a program to store a "Client Name" in a string and display it with a "Welcome" message.
29. Use strlen() to check if a "Password" string entered by a user meets a minimum length of 8 characters.
30. Write a recursive function to find the factorial of a number (useful for calculating combinations in statistics).
31. Create a pointer that stores the address of a "Balance" variable and print the balance using that pointer.
32. Use a pointer to traverse and print all elements of an array containing "Stock Prices."
33. Define a structure named Product with members: ID, Name, and Price.
34. Write a program to create a variable of type Product, assign it values, and display them.
35. Create an array of 5 Employee structures to store the names and salaries of a small team.
36. Define a structure Order that includes another structure Date to track the day, month, and year of a sale.



37. Create a Union called Payment that can store either a "Check Number" (int) or "Transaction ID" (string).
38. Write a program to compare the sizeof a Structure and a Union with identical members to show memory differences.
39. Use an enum for the days of the work week (MON to FRI) and assign it to a variable to check if it is a "Work Day."
40. Explain the "Referencing" and "Dereferencing" operators (& and *) using a practical code example.
41. Write a simple program in C++ using cout and cin and explain how they differ from printf and scanf.
42. Define a class Bank and create two objects, customer1 and customer2, representing individual accounts.
43. Within the Bank class, add a data member balance and a member function deposit().
44. Demonstrate encapsulation by making the salary member of an Employee class private and accessing it via a public function.
45. Create a base class Company and a derived class Branch that inherits the company's "Head Office" address.
46. Show function overloading by creating two functions named area()—one for a square (one side) and one for a rectangle (length and breadth).
47. Write a program where a user interacts with a Machine class function start(), while the internal complex logic remains hidden.
48. Illustrate the use of the namespace std; directive and explain its importance in a C++ program.
49. Use the static storage class to count how many times a particular function has been called during a program's execution.
50. Write a small script to explain why "Objects" are better than "Procedures" for managing a complex e-commerce database.

CHAIRMAN
Board of Studies in Commerce
Osmania University
Hyderabad - 500 007.