# Lab Assignment for UG SPL Computer GE Science Practical Examination July 2024 

## SPLGE- 1: COMPUTER <br> Computer Science as Generic Elective (GE I (B)): Computer Fundamentals Lab

| $\begin{aligned} & \text { SL. } \\ & \text { No. } \end{aligned}$ | Practicals |
| :---: | :---: |
| Practical exercises based on MS Office/ Open Office tools using document preparation and spreadsheet handling packages. |  |
|  | MS Word |
| 1. | Prepare a grocery list having four columns (Serial number, The name of the product, quantity and price) for the month of April, 06. <br> - Font specifications for Title (Grocery List): 14-point Arial font in bold and italics. <br> - The headings of the columns should be in 12-point and bold. <br> - The rest of the document should be in 10-point Times New Roman. <br> Leave a gap of 12 -points after the title. |
| 2. | Create a telephone directory. <br> - The heading should be 16 -point Arial Font in bold <br> - The rest of the document should use 10 -point font size <br> - Other headings should use 10 -point Courier New Font. <br> - The footer should show the page number as well as the date last updated. |
| 3. | Design a time-table form for your college. <br> - The first line should mention the name of the college in 16-point Arial Font and should be bold. <br> - The second line should give the course name/teacher's name and the department in 14-point Arial. <br> - Leave a gap of 12 -points. <br> - The rest of the document should use 10 -point Times New Roman font. <br> - The footer should contain your specifications as the designer and date of creation. |
| 4. | BPB Publications plans to release a new book designed as per your syllabus. Design the first page of the book as per the given specifications. <br> - The title of the book should appear in bold using 20-point Arial font. <br> - The name of the author and his qualifications should be in the center of the page in 16-point Arial font. <br> - At the bottom of the document should be the name of the publisher and address in 16 -point Times New Roman. <br> - The details of the offices of the publisher (only location) should appear in the footer. |
| 5. | Create the following one page documents. <br> - Compose a note inviting friends to a get-together at your house, Including a list of things to bring with them. |




|  | $5006 \quad 5300 \quad 7600 \quad 9800 \quad 6100$ <br> Calculate the commission earned by the salesmen on the basis of following Candidates: <br> The total sale is sum of sales of all the four quarters. |
| :---: | :---: |
| 4. | A company XYZ Ltd. pays a monthly salary to its employees which consists of basic salary, allowances \& deductions. The details of allowances and deductions are as follows: <br> Allowances <br> - HRA Dependent on Basic <br> $30 \%$ of Basic if Basic <=1000 <br> $25 \%$ of Basic if Basic>1000 \& Basic<=3000 <br> $20 \%$ of Basic if Basic >3000 <br> - DA Fixed for all employees, $30 \%$ of Basic <br> - Conveyance Allowance <br> Rs. 50/- if Basic is <=1000 <br> Rs. 75/- if Basic >1000 \& Basic<=2000 <br> Rs. 100 if Basic >2000 <br> - Entertainment Allowance <br> NIL if Basic is <=1000 <br> Rs. 100/- if Basic > 1000 <br> Deductions <br> - Provident Fund <br> $6 \%$ of Basic <br> - Group Insurance Premium <br> Rs. 40/- if Basic is <=1500 <br> Rs. 60/- if Basic > 1500 \& Basic<=3000 <br> Rs. 80/- if Basic >3000 <br> Calculate the following: <br> Gross Salary = Basic + HRA + DA + Conveyance + Entertainment <br> Total deduction $=$ Provident Fund + Group Insurance Premium <br> Net Salary = Gross Salary - Total Deduction |
| 5. | Create Payment Table for a fixed Principal amount, variable rate of interests and time in the format below: |



| 9. | Enter the following data in Excel Sheet |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | TOTAL REVENUE EARNED FOR SAM'S BOOKSTALL (in Indian Rupees) |  |  |  |  |
|  | Publisher Name | 1997 | 1998 | 1999 | 2000 |
|  | A | 1000 | 1100 | 1300 | 800 |
|  | B | 1500 | 700 | 1000 | 2000 |
|  | C | 700 | 900 | 1500 | 600 |
|  | D | 1200 | 500 | 200 | 1100 |
|  | E | 800 | 1000 | 3000 | 560 |
|  | (a) Compute the total revenue earned. <br> (b) Plot the line chart to compare the revenue of all publishers for 4 years. <br> (c) Chart Title should be =Total Revenue of Sam's Bookstall (1997-2000) <br> (d) Give appropriate categories and value axis title. |  |  |  |  |
| 1. | Generate 25 random numbers between 0 \& 100 and find their sum, average and count. How many no. are in range 50-60. |  |  |  |  |

# Lab Assignment for UG SPL Computer GE Science Practical <br> Examination July 2024 

## SPL GE-2: COMPUTER Computer Science Elective (GE-II (B)): Introduction to Programming using 'C' Lab

| SL. No. | Program |
| :---: | :---: |
| 1. | WAP to print the sum and product of digits of an integer. |
| 2. | WAP to reverse a number. |
| 3. | WAP to compute the sum of the first n terms of the following series $S=1+1 / 2+1 / 3+1 / 4+\ldots$ |
| 4. | WAP to compute the sum of the first $n$ terms of the following series $\mathrm{S}=1-2+3-4+5 \ldots \ldots . . . . . . . . .$. |
| 5. | Write a function that checks whether a given string is Palindrome or not. Use this function to find whether the string entered by user is Palindrome or not. |
| 6. | Write a function to find whether a given no. is prime or not. Use the same to generate the prime numbers less than 100. |
| 7. | WAP to compute the factors of a given number. |
| 8. | Write a macro that swaps two numbers. WAP to use it. |
| 9. | WAP to print a triangle of stars as follows (take number of lines from user): |
| 10. | WAP to perform following actions on an array entered by the user: i) Print the even-valued elements ii) Print the odd-valued elements iii) Calculate and print the sum and average of the elements of array iv) Print the maximum and minimum element of array v) Remove the duplicates from the array vi) Print the array in reverse order The program should present a menu to the user and ask for one of the options. The menu should also include options to re-enter array and to quit the program. |
| 11. | WAP that prints a table indicating the number of occurrences of each alphabet in the text entered as command line arguments. |
| 12. | Write a program that swaps two numbers using pointers. |
| 13. | Write a program in which a function is passed address of two variables and then alter its contents. |
| 14. | Write a program which takes the radius of a circle as input from the user, passes it to another function that computes the area and the circumference of the circle and displays the value of area and circumference from the main() function. |
| 15. | Write a program to find sum of n elements entered by the user. To write this program, allocate memory dynamically using malloc() / calloc() functions or new operator. |
| 16. | Write a menu driven program to perform following operations on strings: a) Show address of each character in string b) Concatenate two strings without using strcat function. c) Concatenate two strings using strcat function. d) Compare two strings e) Calculate length of the string (use pointers) |


|  | f) Convert all lowercase characters to uppercase g) Convert all uppercase characters to lowercase <br> h) Calculate number of vowels i) Reverse the string <br> Given two ordered arrays of integers, write a program to merge the two-arrays to get an ordered <br> array. |
| :---: | :--- |
| 17. | WAP to display Fibonacci series (i)using recursion, (ii) using iteration |
| 18. | WAP to calculate Factorial of a number (i)using recursion, (ii) using iteration |
| 19. | WAP to calculate GCD of two numbers (i) with recursion (ii) without recursion. |
| 20. | Create Matrix class using templates. Write a menu-driven program to perform following Matrix <br> operations (2-D array implementation): a) Sum b) Difference c) Product d) Transpose |
| 21. | Create the Person class. Create some objects of this class (by taking information from the user). <br> Inherit the class Person to create two classes Teacher and Student class. Maintain the respective <br> information in the classes and create, display and delete objects of these two classes (Use Runtime <br> Polymorphism). |
| 22. | Create a class Triangle. Include overloaded functions for calculating area. Overload assignment <br> operator and equality operator. |
| 23. | Create a class Box containing length, breath and height. Include following methods in it: a) <br>  <br> postfix) d) Decrement, Overload -- operator (both prefix \& postfix) e) Overload operator = (to <br> check equality of two boxes), as a friend function f) Overload Assignment operator g) Check if it is <br> a Cube or cuboid Write a program which takes input from the user for length, breath and height <br> to test the above class. |
| 24. | Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. |
| 25. | Create 10 students and store them in a file. |
| 26. | Write a program to retrieve the student information from file created in previous question and <br> print it in following format: Roll No. Name Marks. |
| 27. | Copy the contents of one text file to another file, after removing all whitespaces. <br> 28.Write a function that reverses the elements of an array in place. The function must accept only <br> one pointer value and return void. |
| 29. | Write a program that will read 10 integers from user and store them in an array. Implement array <br> using pointers. The program will print the array elements in ascending and descending order. |

# Lab Assignment for UG SPL Computer GE Science Practical <br> Examination July 2024 

## SPL GE-3: COMPUTER Computer Science as Generic Elective (GE III (B)): Introduction to Database Management System Lab



| 9. | Query to display Name and Hire Date of every Employee who was hired in 1981. |
| :---: | :---: |
| 10. | Query to display Name and Job of all employees who don't have a current Manager. |
| 11. | Query to display the Name, Salary and Commission for all the employees who earn commission. |
| 12. | Sort the data in descending order of Salary and Commission. |
| 13. | Query to display Name of all the employees where the third letter of their name is =A'. |
| 14. | Query to display Name of all employees either have two =R's or have two =A's in their name and are either in Dept No $=30$ or their Manger's Employee No $=7788$. |
| 15. | Query to display Name, Salary and Commission for all employees whose Commission Amount is 14 greater than their Salary increased by $5 \%$. |
| 16. | Query to display the Current Date. |
| 17. | Query to display Name, Hire Date and Salary Review Date which is the 1st Monday after six months of employment. |
| 18. | Query to display Name and calculate the number of months between today and the date each employee was hired. |
| 19. | Query to display the following for each employee <E-Name> earns < Salary> monthly but wants < 3 <br> * Current Salary >. Label the Column as Dream Salary. |
| 20. | Query to display Name with the 1st letter capitalized and all other letter lower case and length of their name of all the employees whose name starts with $=J^{\prime}$, ' $A$ ' and $=M$ '. |
| 21. | Query to display Name, Hire Date and Day of the week on which the employee started. |
| 22. | Query to display Name, Department Name and Department No for all the employees. |
| 23. | Query to display Unique Listing of all Jobs that are in Department \# 30. |
| 24. | Query to display Name, Dept Name of all employees who have an =A' in their name. |
| 25. | Query to display Name, Job, Department No. And Department Name for all the employees working at the Dallas location. |
| 26. | Query to display Name and Employee no. Along with their Manger's Name and the Manager's employee no; along with the Employees' Name who do not have a Manager. |
| 27. | Query to display Name, Dept No. And Salary of any employee whose department No. and salary matches both the department no. And the salary of any employee who earns a commission. |
| 28. | Query to display Name and Salaries represented by asterisks, where each asterisk (*) signifies \$100. |
| 29. | Query to display the Highest, Lowest, Sum and Average Salaries of all the employees |
| 30. | Query to display the number of employees performing the same Job type functions. |
| 31. | Query to display the no. of managers without listing their names. |
| 32. | Query to display the Department Name, Location Name, No. of Employees and the average salary for all employees in that department. |
| 33. | Query to display Name and Hire Date for all employees in the same dept. as Blake. |
| 34. | Query to display the Employee No. And Name for all employees who earn more than the average salary. |
| 35. | Query to display Employee Number and Name for all employees who work in a department with any employee whose name contains $a=$ ' $T$ '. |
| 36. | Query to display the names and salaries of all employees who report to King. |
| 37. | Query to display the department no, name and job for all employees in the Sales department. |

# Lab Assignment for UG SPL Computer GE Science Practical <br> Examination July 2024 

## SPL GE-4: COMPUTER

## Computer Science as Generic Elective (GE IV (B)) Computer Networks and Internet Technologies Lab



|  | Subscribe to XYZ News Magazine and Emails <br> Interested in receiving daily small updates of all latest News? Well, now you can. And best of all, it is free! Just fill out this form and submit it by clicking the "send it In" button. We will put you on our mailing list and you will receive your first email in 3-5 days. <br> Please fill the following boxes to help us send the emails and our news letter: <br> First Name: $\square$ <br> Last Name: $\square$ <br> Business: $\square$ <br> We must have a correct e-mail address to send you the news letter: <br> Email: $\square$ <br> How did you hear about XYZ News Magazine and Emails? <br> - Here on the Web OIn a magazine OTelevision OOther <br> Would you like to be on our regular mailing list? <br> $\square$ Yes, we love jurk emails |
| :---: | :---: |
| 11. | List of Practicals using JavaScript <br> Create event driven program for following: <br> 1. Print a table of numbers from 5 to 15 and their squares and cubes using alert. <br> 2. Print the largest of three numbers. <br> 3. Find the factorial of a number $n$. <br> 4. Enter a list of positive numbers terminated by Zero. Find the sum and average of these numbers. <br> 5. A person deposits Rs 1000 in a fixed account yielding $5 \%$ interest. Compute the amount in the account at the end of each year for $n$ years. <br> Read n numbers. Count the number of negative numbers, positive numbers and zeros in the list. |

