GOPALAN PRE UNIVERSITY COLLEGE (AS752)
SUBJECT & CODE: Computer Science (41)

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FIRST PUC – COMPUTER SCIENCE FINAL EXAMINATION

GUIDANCE FOR DISTRIBUTION OF MARKS INCLUDING CHOICE QUESTIONS

Knowledge	**30%**	**31**
Understanding	**40%**	**43**
Application	**20%**	**21**
Skill	**10%**	**10**
Total	**100%**	**105**

Question Paper Structure

10 Questions of one mark without choice out of 10 (Very Short Answers) (VSA) PART A
05 Questions of two marks each out of 08 (Short Answers) (SA) PART B
05 Questions of three marks each out of 08 (Long Answers) (LA) PART C
07 Questions of five marks each out of 11 (Essay Type) (E) PART D

Unit	Description	VSA(1 Mark)	SA(2 Marks)	LA(3 Marks)	E(5Marks)	Total Marks
A	Fundamentals of Computers	2	3	2	2	24
B	Problem solving Methodology	1	1	2	2	19
C	Programming in C++	5	3	4	5	48
D	Elementary Concepts of Word Processing, Spreadsheets and wed designing (Commands should not be included)	2	1	-------	2	14
	Total Marks	**10**	**16**	**24**	**55**	105
	Total No of Questions in Question paper	**10**	**08**	**08**	**11**	37
	Total No of Questions to be answered	*1X10=10*	*2X5=10*	*3X5=15*	*5X7=35*	*70*

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Unit	Description	VSA (1 Mark)	SA (2 Marks)	LA (3 Marks)	E (5Marks)	Total Marks
A	***Fundamentals of Computers***	*2*	*3*	*3*	*2*	*27*
Ch1	Overview of Computers	1	1	----	1	08
Ch2	Input Output and Memory units	1	1	1	-------	06
Ch3	Data representation	------	------	1	1	08
Ch4	Software Concepts	------	1	1	-------	05
B Ch5	***Problem solving Methodology***	*1*	*1*	*1*	*1*	*11*
C	***Programming in C++***	*5*	*3*	*4*	*5*	*48*
Ch6	Object Oriented Concepts	------	1	-------	------	02
Ch7	Introduction to c++	1	-------	1	1	09
Ch8	Data types	------	1	-------	------	02
Ch9	Input output operators	1	-----	1	------	04
Ch10	Control Statements	1	------	------	2	11
Ch11	Arrays	1		1	1	09
Ch12	Functions (Library functions)	-----	1	------	------	02
Ch13	User defined Functions	1	------	-----	1	06
Ch14	Structures			1		03
D	***Elementary Concepts of Word Processing, Spreadsheets and wed designing (Commands should not be included)***	*2*	*1*	-----	*3*	*19*
Ch15	Word Processing	1	1	------	------	03
Ch16	Spreadsheets	1	------	------	2	11
Ch17	Web designing	------	------	------	1	05
	Total Marks	10	16	24	55	105
	Total No of Questions to be answered	*1X10=10*	*2X5/8=10*	*3X5/8=15*	*5X7/11=35*	*70/37*

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I PUC - Computer Science

Practical's Syllabus

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The practical examination marks of 20 is distributed as follows :

1.	Writing one program from **Section A** and one problem from either **Section B** or **Section C**	8 marks
2.	Execution of any one (Examiner choice)	6 marks
3.	Formatting the output	2 marks
4.	Record writing	4 marks
	TOTAL	**20 marks**

Practical List

Section A

List of practical programs for C++

1. Write a program to interchange the values of two variables
   a. Using a third variable.
   b. Without using a third variable.
2. Write a program to find the area and circumference of a circle.
3. Write a program to find the area of a triangle given three sides.
4. Write a program to convert days into years, months and days (**Hint:** Assume all months have 30 days)
5. Write a program to find the largest, smallest and second largest of three numbers using simple if statement.
6. Write a program to input the total amount in a bill, if the amount is greater than 1000 the a discount of 8% is given otherwise no discount is given, output the total amount, the discount amount and the final amount, use simple if statement.
7. Write a program to check whether a given year is a leap year or not using if-else statement.

8. Write a program to input a character and find out whether it is a lower case or upper case character using if-else statement.

9. Write a program to input the number of units of electricity consumed in a house and calculate the final amount using nested-if statement. Use the following data for calculation

Units Consumed	**Cost**
< 30	Rs 3.50 / unit
>=30 and <50	Rs 4.25 / unit
>=50 and < 100	Rs 5.25 / unit
>=100	Rs 5.85 /unit

10. Write a program to input the marks of four subjects, calculate the total percentage and output the result as either "First class", or "Second class", or "Pass class" or "Fails" using switch statement.

Class	**Range %**
First Class	Between 60 and 100%
Second Class	Between 50 and 59%
Pass Class	Between 40 and 49%
Fails	Less than 40%

11. Write a program to find the sum of all the digits of a number using while statement.

12. Write a program to input principal amount, rate of interest and time period and calculate compound interest using while statement

    (**Hint:** CI = P * (1 + R / 100) ^{T}).

13. Write a program to check whether a given number is a power of 2.

14. Write a program to check whether a given number is an Armstrong number using do-while statement (**Hint:** 153 = 1^3 + 5^3+ 3^3).

15. Write a program to find the factorial of a number using for statement.

16. Write a program to generate the Fibonacci sequence up to a limit using for statement.

17. Write a program to find the sum and average of "N" numbers.

18. Write a program to find the second largest of "N" numbers.

19. Write a program to arrange a list of numbers in ascending order.

20. Write a program to find the position of a given number in an array.

21. Write a program to check whether a given matrix is scalar or not.

22. Write a program to sum of all the rows and the sum of all the columns of a matrix separately.

23. Write a program to find the sum of two compatible matrices.

24. Consider an array MARKS[20][5] which stores the marks obtained by 20 students in 5 subjects. Now write a program to:

    a) Find the average marks obtained in each subject
    b) Find the average marks obtained by every student
    c) Find the number of students who have scored below 50 in their average

25. Write a program to check whether a given string is a palindrome or not.

26. Write a program to count the number of vowels and consonants in a string.

27. Write a program to find the GCD and LCM of two numbers using functions.

28. Write a program to find X^Y using functions.

29. An industrial organization wants to computerize the Allowance calculations. Given the monthly Sales for the salesman, the rules for the calculations are as follows:

    i. If the total sales is less than Rs. 10000/- there is no allowance.
    ii. If the total sales is between Rs. 10000/- and Rs. 20,000/- then the Allowance is 10% of the sales amount or Rs. 1800/- whichever is minimum.
    iii. If the total sales is greater than or equal to Rs. 20000/- then the allowance is 20% of the sales amount or Rs.6,000/- whichever is minimum.

    Write a program using a function to calculate the allowance.

30. Write a program to input the register number, name and class of all the students in a class into a structure and output the data in a tabular manner with proper heading

Section B

Spreadsheet Practical List

1. Eight salesmen sell three products for a week. Using a spreadsheet create a sales report. The report should include the name of the salesman, Amount of sales for each product and the salesman's total sales in the format given below.

Sales for the Month				
Name	**Total Amt. for**	**Total Amt. for**	**Total Amt.**	**Total sales**

    a) Type in all text and numbers in the spreadsheet.
    b) Format all numbers as a currency.

c) Center the spreadsheet headings across the spreadsheet.
d) Format all text.
e) Create formulas to display a total for each sales rep.
f) Create formulas to display a total for each product.
g) Create a formula to calculate the total sales for all sales rep's for the month.

2. Enter the following details for 10 employees Employee Code, Employee name, Basic salary, DA, HRA, Loans, Total salary and Tax.

Salary for the Month							
Employee Code	**Employee Name**	**Basic Salary**	**DA**	**HRA**	**Loan**	**Total Salary**	**Tax**

a) Type the Employee Code, Employee Name, Basic Salary and Loan amount data for 10 employees in the spreadsheet.
b) Format all numbers as a currency.
c) Center the spreadsheet headings across the spreadsheet.
d) Format all text.
e) Create a formula to compute DA as 50% of the Basic salary and copy this to all the cells.
f) Create a formula to compute HRA as 12% of the Basic salary and copy this to all the cells.
g) Create a formula to compute Total salary and copy this to all the cells.
h) If Total salary is greater than 5,00,000, compute Tax as 20% of Total salary otherwise 10% of the Total salary using a formula.

3. Enter the following details for 10 Students Register Number, Name, Subject1 Marks, Subject2 Marks, Subject3 Marks, Subject4 Marks, Total Marks and Percentage.

Test Marks data of a Class							
Register Number	**Name**	**Subject1 Marks**	**Subject2 Marks**	**Subject3 Marks**	**Subject4 Marks**	**Total Marks**	**Percentage**

a) Type the Register Number, Name and marks of four subjects for 10students in the spreadsheet.
b) Format all text and numeric data appropriately.

e) Create a formula to compute Percentage and copy this to all the cells.

f) Create a formula to compute the highest and lowest score using a library function.

g) Draw a bar graph for Register Number against total marks.

h) Draw Pie chart for one student showing his marks in different subject from total score

4. A housewife maintains the budget expenditure in a spreadsheet under the headings Income and Expenses. Income includes husband's and Wife's income separately under different headings. Expenses include Rent, Bills, Household expenses and medical expenses.

Budget for the Month							
Income				Expenses		Total	
Husband	Wife	Rent	Bill	Household	Medical	Expenditure	Savings

a) Type the Income and Expenses data for the entire month in the spreadsheet.

b) Format all numbers as currency.

c) Center the spreadsheet headings across the spreadsheet.

d) Create a formula to compute the Total expenditure and copy this to all the cells.

e) Create a formula to compute the savings and copy this to all the cells.

f) Draw a bar graph to show expenditure under each heading.

g) Draw Pie chart to show the distribution of salary.

5. A Bank offers loan for housing and vehicle at an interest of 10.25% for housing and 14.2% for vehicle. For a loan applicants compute the monthly premium (EMI), given total installments as 24 months. Also compute the monthly interest and monthly principal amount and the total amount of principal and Interest paid using Financial library functions in a spreadsheet.

6. Implement five functions each for Arithmetic, Date and Time, Financial, Logical, text and statistical functions. Write the syntax, example and output for simple problems.

7. Create a data form to implement a student database and perform all related operations with the data form.

Section C

Web Designing Practical List

1. Create a Web page to display your details using different tags.
2. Create a model Web site for your college making using different tags.