KARNATAK UNIVERSITY, DHARWAD
ACADEMIC (S&T) SECTION
ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಧಾರವಾಡ
ವಿದ್ಯಾಮಂಡಳ (ಎಸ್&ಟಿ) ವಿಭಾಗ

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NAAC Accredited
'A' Grade 2014

No. KU /Aca(S&T)/ JS-30/2022-23/ **1392**   Date: **19 DEC 2022**

<div align="center">ಅಧಿಸೂಚನೆ</div>

ವಿಷಯ: 2022–23ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಎಲ್ಲ PG Diploma, Advance Diploma, Diploma & Certificate Courseಗಳನ್ನು Credit ರೂಪ ಹಾಗೂ ಸೆಮಿಸ್ಟರ್ ಪದ್ಧತಿಗೆ ಸದರಿ ಎಲ್ಲ ಕೋರ್ಸುಗಳಲ್ಲಿ ಏಕ ರೂಪದ Creditಗಳನ್ನು ಅಳವಡಿಸುವ ಕುರಿತಾದ ಕರಡು ವಿನಿಯಮಾವಳಿ ಹಾಗೂ ಪಠ್ಯಕ್ರಮವನ್ನು ಅಳವಡಿಸಿರುವ ಕುರಿತು.

ಉಲ್ಲೇಖ: 1. ವಿಶೇಷ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯ ನಿರ್ಣಯ ಸಂ. 09, ದಿನಾಂಕ: 07.12.2022
2. ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಆದೇಶ ದಿನಾಂಕ: 15|12|2022

ಮೇಲ್ಕಾಣಿಸಿದ ವಿಷಯ ಹಾಗೂ ಉಲ್ಲೇಖಗಳನ್ವಯ ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಆದೇಶದಂತೆ, ದಿನಾಂಕ: 07.12.2022 ರಂದು ಜರುಗಿದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯಲ್ಲಿ ನಿರ್ಣಯಿಸಿದಂತೆ, 2022–23ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಅನ್ವಯವಾಗುವಂತೆ, PG Diploma / Advance Diploma / Diploma / Certificate Courseಗಳನ್ನು Credit ರೂಪ ಹಾಗೂ ಸೆಮಿಸ್ಟರ್ ಪದ್ಧತಿಯಂತೆ ಸದರಿ ಮೇಲಿನ ಎಲ್ಲ ಕೋರ್ಸುಗಳಲ್ಲಿ ಏಕ ರೂಪದ Creditಗಳನ್ನೊಳಗೊಂಡಂತೆ ಕರಡು ವಿನಿಯಮಾವಳಿಗಳಂತೆ ಈಗಾಗಲೇ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಪ್ರಕಟಿಸಲಾಗಿದೆ. ಸದರ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಕ.ವಿ.ವಿ. www.kud.ac.in ಅಂತರ್ಜಾಲದಿಂದ ಡೌನಲೋಡ ಮಾಡಿಕೊಳ್ಳಲು ಸೂಚಿಸುತ್ತಾ, ವಿದ್ಯಾರ್ಥಿಗಳು ಹಾಗೂ ಸಂಬಂಧಿಸಿದ ಎಲ್ಲ ಬೋಧಕರ ಗಮನಕ್ಕೆ ತಂದು ಅದರಂತೆ ಕಾರ್ಯಪ್ರವೃತ್ತರಾಗಲು ಸೂಚಿಸಲಾಗಿದೆ.

ಕುಲಸಚಿವರು

ಅಡಕ: ಮೇಲಿನಂತೆ

ಗೆ,

ಅಧ್ಯಕ್ಷರು / ಸಂಯೋಜಕರು, Dr. B.R.Ambedkar Studies / Basava Adhyana Peetha / KRI / Gandhian Studies / Jainology / Kanaka Studies / Kannada / Hindi / Sanskrit / Women's Studies / Yoga Studies / Psychology / Babu Jagajivan Ram Studies / Commerce / History & Arch. / Computer Science / Criminology & Forensic Sci. / Veman Studies / Management / Law / Foreign Language, BTTM (KACD) ಅಧ್ಯಯನ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ (ಕ.ವಿ.ವಿ. ಅಂತರ್ಜಾಲ ಹಾಗೂ ಮಿಂಚಂಚೆ ಮೂಲಕ ಬಿತ್ತರಿಸಲಾಗುವುದು)

ಪ್ರತಿ:

1. ಕುಲಪತಿಗಳ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
2. ಕುಲಸಚಿವರ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
3. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ) ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
4. ಅಧೀಕ್ಷಕರು, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ / ಗೌಪ್ಯ / ಜಿ.ಎ.ಡಿ. / ವಿದ್ಯಾಮಂಡಳ (ಪಿ.ಜಿ.ಪಿಎಚ್.ಡಿ) ವಿಭಾಗ, ಸಂಬಂಧಿಸಿದ ಕೋರ್ಸುಗಳ ವಿಭಾಗಗಳು ಪರೀಕ್ಷಾ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
5. ನಿರ್ದೇಶಕರು, ಕಾಲೇಜು ಅಭಿವೃದ್ಧಿ / ವಿದ್ಯಾರ್ಥಿ ಕಲ್ಯಾಣ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.

KARNATAK UNIVERSITY, DHARWAD

Regulation and Syllabus

For

(I and II Semesters)

Post Graduate Department of Studies in Computer Science

Pavate Nagar, Dharwad-580003

Syllabus

For

Post Graduate Diploma in Computer Applications (PGDCA)

w.e.f. 2022-23 Onwards

Regulations governing one-year

P.G. Diploma in Computer Applications

PREAMBLE

INTRODUCTION

The area of Computer Science and its applications is advancing rapidly, especially during the last few years. In view of the present developments in the area and needs of job market, the Board of Studies in Computer Science, decided to revise the present syllabus of PGDCA course.

OBJECTIVES

To train students in various aspects of Computer applications
To provide diverse and fulfilling career options in computer applications.

COURSE OFFERED

One year P.G. Diploma course in Computer Application (concurrent course)

COURSE STRUCTURE:

1. **Title:**
   The course shall be called P.G. Diploma in computer Applications (PGDCA)
2. **Duration:**
   This course is extended over a period of one academic year with two semesters. Each semester will have 16 weeks duration.
3. **Eligibility:**
   A candidate who has passed the Bachelor's degree examination with a minimum of 45% marks in any discipline is eligible for admission to the course. In case of SC/ST students the relaxation for eligibility condition shall be as fixed by the University from time to time.
4. **Medium of Instruction:**
   The medium of instruction will be in English only.
5. **Hours of Instruction:**
   There shall be four hours per week for every theory & practical papers.
6. **Number of papers:**
   Each semester will have a total of 650 marks consisting theory, practical and mini project.
7. **Attendance:**
   7.1. Each course shall be taken as a unit for the purpose of calculating the attendance.
   7.2. Each student shall sign the attendance register maintained by the Department for each course for every hour/unit of teaching. The course teachers shall submit the monthly attendance report to the Chairperson/ Coordinator of the respective Department who shall notify the same on the notice board of the Department during the second week of the subsequent month.

7.3. Marks shall be awarded to the student for attendance as specified in the regulations concerning evaluation.

7.4. A student shall be considered to have satisfied the required attendance for each course if he/she has attended not less than 75 % of the total number of instructional hours during the semester.

7.5. There is no provision for condoning shortage of attendance.

7.6. The students who do not satisfy the prescribed requirement of attendance shall not be eligible for the ensuing examination. Such candidates may seek admission afresh to the given semester.

8. **Examination**

8.1. There shall be an examination at the end of each semester conducted by the University.

8.1.1. There shall be semester-end examination of 2 hours duration for the courses carrying 60 marks in theory and 50 marks in Practical.

8.1.2. Every student shall register for each semester-end examination as per the University Notification by submitting duly completed application form through the proper channel and shall also pay the fees prescribed.

8.1.3. The Office of the Registrar (Evaluation) / UUCMS shall allot the Register Number to the candidate at the 1st semester-end examination. That will be the Register Number of the candidate for subsequent appearances and semester-end examinations.

8.1.4. The Answer scripts shall be in the safe custody of the University for a period of six months from the date of announcement of results.

8.1.5. The programme is a fully carry-over system. A candidate reappearing for either the first or second semester examinations shall be permitted to take examinations as and when conducted.

8.1.6. Candidates who have failed, remained absent or opted for improvement in any course/ courses shall appear for such course/ courses in the two immediate successive examinations that are conducted. However, in the case of the candidates appearing for improvement of their marks, the marks secured in the previous examination shall be retained, if the same is higher.

8.1.7. Candidates who desire to challenge the marks awarded to them in the semester end examinations may do so by submitting an application along with the prescribed fee to the Registrar (Evaluation) within 12 days from the announcement of results.

8.2 First semester

    8.2.1   There shall be a Board of Examiners to set, scrutinize and approve the question papers.

    8.2.2   The BOE shall scrutinize the question papers submitted in two sets by the paper setters and submit the same to the office of the Registrar (Evaluation).

    8.2.3   The office of the Registrar Evaluation shall dispatch the question papers to the Department/ P. G .Centres/ Colleges who shall conduct the Examinations according to the schedule announced by the University.

    8.2.4   The Chairperson / Coordinator of the Department/ Administrator of the P. G. Centre/ Principal of the College shall appoint one of their full time course teachers as Post Graduate Programme (PGP) Coordinator who shall conduct the examinations and arrange for evaluation of answer scripts for first semester.

    8.2.5   Answer scripts shall be valued by the examiners appointed by the University. However, in those circumstances where an examiner for a particular course is not available, then the answer scripts of that course shall be dispatched to the office of the Registrar (Evaluation) who shall arrange for valuation of the same.

    8.2.6   There shall be a single valuation for first semester. The examiner (Internal or External) shall value the answer scripts and shall indicate the marks awarded to each question on marks list.

    8.2.7   The Marks List, a copy of the Examination Attendance Sheet and the sealed bundles of the answer scripts shall be dispatched by the PGP Coordinator to the Registrar (Evaluation)'s Office at the conclusion of the valuation at the respective centers.

    8.2.8   The Office of the Registrar Evaluation shall process and announce the results.

    8.2.9   Student indirectly will carry out the their project work in the department under the supervision of the department faculty. Project work must be bored on the course studied in that particular semester. At the end of the semester student has to submit the dissertation. Examination consists of evaluation of dissertation and viva-voce as per the existing P.G. Diploma guidelines

8.3 Second Semester

    8.3.1   There shall be a Board of Examiners to set, scrutinize and approve question papers.

    8.3.2   As far as practicable, it will be ensured that 50% of the paper setters and examiners are from other Universities/ Research Institutes.

    8.3.3   Each answer script of the semester-end examination (theory and project report) shall be assessed by two examiners (one internal and another external). The marks awarded to that answer script shall be the average of these two evaluations. If the difference in marks between two evaluations exceeds 20% of the maximum marks, such a script shall be assessed by a third examiner. The marks allotted by the third examiner shall be averaged with nearer award of the two evaluations.

            Provided that in case the number of answer scripts to be referred to the third examiner in a course exceeds minimum of 5 or 20% of the total number of scripts, at the even semester-end examinations, such answer scripts shall be valued by the Board of Examiners on the date to be notified by the Chairperson of the Board of Examiners and the marks awarded by the Board shall be final.

8.4 Evaluation

8.4.1   Each Course shall have two evaluation components – Formative (Internal) Assessment (IA) and the Summative (Semester End) Exams.

8.4.2   The IA component in a theory course shall carry 40% and the Semester-end Examination shall carry 60%. Whereas IA component in Practical course shall carry 50% and the Semester-end Examination shall carry 50%

Courses having 40 % / 50 % marks as internal assessment shall have 3 marks allotted to attendance.

8.4.3   Marks for attendance shall be awarded to the students as stipulated below :

Attendance (in percentage)	Marks
Above 90	3
Above 80 and up to 90	2
Above 75 and up to 80	1
75	No marks

8.4.4   Formative or Internal Assessment (IA) shall be based on 02 written tests, seminars, assignments / any other instructional activity.

8.4.5   The IA marks list shall be notified on the Department notice board as and when the individual IA components are completed and the consolidated list shall be submitted to the Office of the Registrar (Evaluation) before the commencement of semester-end examination.

8.4.6   The tests shall be written in a separately designated book supplied by the University which shall be open for inspection by the students after evaluation.

8.4.7   There is no provision for seeking improvement of Internal Assessment marks.

8.4.8   The IA records, pertaining to Semester-end Examination, shall be preserved by the department/Centres/Colleges for a period of one year from the date of semester examination. These records may be called by the University or a body constituted by the University as and when deemed necessary.

9   Maximum duration for completion of the Programme

9.1 A candidate admitted to any P.G. Diploma shall complete it within a period, which is double the duration of the programme from the date of admission.

9.2 Whenever the syllabi are revised, the candidate reappearing shall be allowed for the examinations only according to the new syllabi.

10   Declaration of Results

10.1 The minimum marks for a pass in each course shall be 40% of the total marks including both the IA and the semester-end examinations. Further, the candidate shall obtain at least 50% of the marks in the semester-end examination. There is no minimum for the IA marks

10.2 Candidates shall secure a minimum of 50% in aggregate in all courses of the programme in each semester to successfully complete the programme

10.3 For the purpose of announcing the results, the aggregate of the marks secured by a candidate in two semester examinations shall be taken into account. However, Ranks shall not be awarded in case the candidate has not successfully completed each of the semesters in first attempt or has not completed the programme in the stipulated time or had applied for improvement of results.

11. Percentage and Grading: Result shall be declared in terms of SGPA and at the end of two semester as CGPA. The calculation of CGPA is as under.

11.1 If P is the percentage of marks secured (IA + semester end score) by the candidate in a course which is rounded off to the nearest integer, the grade point (GP) earned by the candidate in that course will be given as below:

Percentage (%)	Grade(GP)	Percentage (%)	Grade(GP)
40	4.0	71-75	7.5
41-45	4.5	76-80	8.0
46-50	5.0	81-85	8.5
51-55	5.5	86-90	9.0
56-60	6.0	91-95	9.5
61-65	6.5	96-100	10.0
66-70	7.0		

Grade point of less than 4 shall be considered as fail in the course, hence, GP=0 and for the absent candidate also GP=0.

11.2 A student's level of competence shall be categorized by grade point (GP), Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of the programme.

11.3 Semester Grade Point Average (SGPA): The SGPA is a ratio of sum of the number of Credit Grade Points scored from all the courses (subject) of given semester to the total credits of such semester in which the candidate studied.

$$(Credit\ Grade\ Points\ of\ each\ course\ =\ Credits\ \times\ GP)$$

11.4 Cumulative Grade Point Average (CGPA): It is calculated as below for 2 semester programme.

$$CGPA = \frac{(Credit_1 \times SGPA_1) + (Credit_2 \times SGPA_2)}{Total\ credits\ of\ programme\ (sum\ of\ credits\ of\ 2\ semesters)}$$

OR

$$CGPA = \frac{Total\ credit\ grade\ points\ of\ all\ the\ courses (subjects)\ in\ the\ programme}{Total\ credits\ of\ programme}$$

11.5 After studying and passing, all the credits prescribed for the programme the degree shall be awarded with CGPA score after rounding off to second decimal and class distinguishing as second class, first class, and distinction along with grade letter as under.

But, a minimum aggregate collectively in all the papers should be 5.00 in the given semester to declare the result pass in terms of CGPA.

CGPA of the programme(Degree)	Class obtained	Grade Letter
9.5 to 10.00	Outstanding	A^{++}
7.00 to 9.49	Distinction	A^{+}
6.00 to 6.99	First Class	A
5.50 to 5.99	Second class	B^{+}
5.00 to 5.49		B
4.00 to 4.99	Pass	C
Less than 4.0	Fail/ Reappear	D

Post Graduate Diploma in Computer Applications (PGDCA)

w.e.f. 2022-23 Onwards

Semester	Subject Code	Core Course (Subject / Paper)	Max. Marks		Total Marks	Teaching Hrs. / week	Credits
			IA	Sem. end Exam			
I	DP21T101	Introduction to Office Automation-1 (Theory)	40	60	100	04	03
	DP21T102	C porgramming-2 (Theory)	40	60	100	04	03
	DP21T103	Windows Operating System-3 (Theory)	40	60	100	04	03
	DP21P104	Office Automation Lab -4 (Practical)	50	50	100	04	03
	DP21P105	C Programming Lab-5 (Practical)	50	50	100	04	03
	DP21P106	Operating System Lab-6 (Practical)	50	50	100	04	03
	DP21D107	Mini project 1	25	25	50	04	02
		Total Marks for the First Semester	**295**	**355**	**650**	**28**	**20**
II	DP21T201	Page Maker & Adobe Photoshop-7 (Theory)	40	60	100	04	03
	DP21T202	Corel Draw-8 (Theory)	40	60	100	04	03
	DP21T203	Tally & SPSS-9 (Theory)	40	60	100	04	03
	DP21P204	Page Maker & Adobe Photoshop Lab-10 (Practical)	50	50	100	04	03
	DP21P205	Corel Draw Lab-11 (Practical)	50	50	100	04	03
	DP21P206	Tally & SPSS-12 (Practical)	50	50	100	04	03
	DP21D207	Mini project 2	25	25	50	04	02
		Total Marks for the Second Semester	**295**	**355**	**650**	**28**	**20**
		GRAND TOTAL (SEMESTER I & II)	**590**	**710**	**1300**	**56**	**40**

DP21T101-INTRODUCTION TO OFFICE AUTOMATION - 1

Total Hours: 48

UNIT-I

Introduction to computers: Anatomy of Computer System, Hardware and Software Components, Memory unit: Types of memory, ROM, RAM, types of RAM & ROM, Introduction to cache add virtual memory.

[10 Hours]

UNIT-II

MS-word: Introduction, Important Features of MS-Word, Creating and Editing a document, Entering Text in the documents, Moving Around the documents, formatting a document
Formatting A Document: Format and align text, Line and paragraph spacing, add bulleted and numbered lists, add borders and shading, Changing the Layout of a Document. Using Editing and **Proofing Tools:** Spell and grammar check, Shortcut Menus, Find and replace text. Working with **Tables:** Insert a table, convert a table to text, Navigate and select text in a table, resize parts of a table, align text in a table, format a table, Insert and delete columns and rows, Borders and shading, Merge table cells.

[12 Hours]

UNIT-III

MS-Excel: The Basics Creating a New Workbook Navigating in Excel Moving the Cell Pointer Using Excel Menus Using Excel Toolbars: Hiding, Displaying, and Moving Toolbars Entering Values in a Worksheet and Selecting a Cell Range, saving a Workbook & Re- opening a saved workbook **Formatting a Worksheet:** Formatting Fonts & Values Adjusting Row Height and Column Width, Changing Cell Alignment, Adding Borders, Applying Colors and Patterns, Using the Format Painter, Using AutoFormat Merging Cells, Rotating Text and using AutoFit.
Managing your workbooks: Inserting and Deleting Worksheets Renaming and Moving Worksheets, protecting a Workbook HidingColumns, Rows and Sheets, Entering Date Values and using AutoComplete
Formulas: Creating a basic Formula Calculating Value Totals with AutoSum Editing & Copying Formulas Fixing Errors in Your Formulas
Creating & Working with Charts: Creating a Chart Moving and Resizing a Chart Formatting and Editing Objects in a Chart, working with Pie Charts Adding Titles, Gridlines, and a Data Table Formatting a Data Series and Chart Axis Annotating a Chart Working with 3-D Charts.

[12 Hours]

UNIT-IV

PowerPoint: Understanding the PowerPoint Program Screen. Presentation: Creating a New Presentation, Inserting and Deleting a Slide and Selecting a Layout Opening a Presentation, Navigating a Presentation Using Undo, Redo and Repeat Saving a Presentation.
Inserting and Editing Text: Inserting Text Editing Text, Cutting, Copying, and Pasting Text, Moving and Copying Text with the Mouse, Checking Your Spelling, Finding and Replacing Text Inserting Symbols and Special Characters

Formatting Text: Changing Font Type, Changing Font Size, Changing Font Color, Changing Font Style, Using the Font Dialog Box, Using the Format Painter Using WordArt. Formatting a Presentation: Using Document Themes, Changing the Background of a Slide Rearranging Slides Adding Headers and Footers Using the Slide Master Working with Bulleted and Numbered Lists Changing Paragraph Alignment and Line Spacing Working with Tabs and Indents.

Working with Objects: Inserting Clip Art Inserting Pictures and Graphics Files Formatting Pictures and Graphics Inserting Shapes Formatting Shapes Resize, Applying Special Effects to Objects Grouping Objects.

Working with Tables: Creating a Table, Adjusting Column Width and Row Height, Inserting and Deleting Rows and Columns, Merging and Splitting Cells, Working with Borders and Shading Applying a Table Style.

[14 Hours]

REFERENCES:
1. Programming in C, P.B. Kotur.
2. Office Automation Concepts and Tools by Tsichritzis, D. (Ed.)
3. Microsoft Office 2016 by Joan Lambert.

DP21P104-Introduction to Office automation Lab Assignment List

1. Create a word document and set
   a) Left and right margin $\longrightarrow$ 1.5"
   b) Landscape orientation
   c) Insert line numbers and page borders
   d) Header and Footer text
   e) Use spell check and grammar check
   f) Any formatting options (Bullets, Font, superscript, subscript, etc).

2. Design an invitation document using word art, clip art and auto shapes.

3. Create a document with a table as shown below.

Roll No.	Name	Subject Marks			Total
		English	Kannada	Hindi	

4. Write procedure to create company letter head.
5. Write procedures to create a memo in word.

6. Write procedures to create a resume.

7. Write procedure to create greeting card.
8. Write procedures to create a cover page of a project report.

9. Write procedures to create a mail merge letter.

10. Write procedures to create a macro for inserting a picture and formatting the text.
11. Write procedures to create a worksheet with 4 columns, enter 10 records and find the sum of all columns.

12. Write procedures to create a report containing the pay details of the employee in excel.

13. Write procedures to create a student result sheet in excel.

14. Write procedures to create a simple bar chart to highlight the sales of a company for 3 different periods in Excel.

15. Write procedures to create a pie chart for a sample data and give legends in Excel.

16. Use any five categories of functions available in Excel.

17. Write procedures to create a simple presentation to list simple dos commands, hardware, software.

18. Create a presentation for introduction to computers using template.

19. Explain the features of any product using transition effects in the presentation.

20. Create a presentation to introduce your institute using action buttons and organization chart.

DP21T102-C PROGRAMMING-2

Total Hours: 48

UNIT-I

Introduction to Programming Paradigms: Evolution of programming languages, Structured programming, Procedural programming, object oriented programming, Functional programming and Logic programming, compilation process, object code, source code, executable code, fundamentals of algorithms, flow charts.

[10Hours]

UNIT-II

Fundamentals: C character set Identifiers & Keywords, data types, constants, variables and arrays, declarations, expressions, statements, symbolic constants

Data types: Properties of type and objects, data objects, variables and constants, data types, specification and implementations of elementary data types, declaration, type checking and type conversion, assignment and initialization, structured data types-vectors and arrays, records, lists, character strings, files and input-output.

[12 Hours]

UNIT-III

Operators and Expressions: Arithmetic operators, unary operators, relational and logical operators, assignment operators, conditional operators, Library functions. Control Statements: Branching, Looping, Nested control structures, switch break, continue statements, comma operator, go to statement. Functions: Defining a function, accessing a function, function prototypes, passing arguments to a function, recursion.

[12 hours]

UNIT-IV

Arrays: Defining and processing, one-dimensional Array, Multidimensional Array declaration and their applications, Passing arrays to a function. String: String variables, declaring & initializing string variables, reading & writing strings, string Functions - concatenation, comparison, copy, length implementing the above functions without using built-in string functions, arithmetic operations on characters, programming examples**.**

[14Hours]

REFERENCES:

1. Programming Languages, Design and Implementation, Pratt, T.W., PHI
2. Programming with C, Gottfried, Schaum'sSeries, TMH Publications.
3. Programming in ANSI C, E. Balaguruswamy, TMH Publications.
4. Computer Programming C.V. Rajmaman, PHI
5. Let us C - YashwantKanetkar, BPB Publications
6. Programming Languages, Concepts and Constructs, Ravi Sethi, Addison Wiley.

1. Write a C Program to find the simple interest.
2. Write a C Program to convert temperature from Degree Centigrade to Fahrenheit.
3. Write a C Program to calculate the sum of 5 subjects and find the percentage.
4. Write a C Program to swap of two number's without using third variable.
5. Write a C Program to reverse a given number.
6. Write a C Program to find the greatest number among 3 numbers.
7. Write a C Program to show the use of conditional operator.
8. Write a C Program to find the entered year is leap year of not.
9. Write a C Program to use arithmetic operators using switch case.
10. Write a C Program to print star sequence as shown below:

    ```
        *
       **
      ***
     ****
    *****
    ```

11. Write a C program to display the series and find sum of 1+3+5+'…'+n
12. Write a C program to show sum of 10 elements of array and its average.
13. Write a C program to find the square of a number using function.
14. Write a C program to swap two numbers using function.
15. Write a C program to print the multiplication table from 1 to 10 using do_while loop.
16. Write a C program to illustrate the use of the break statement.
17. Write a C program to illustrate the use of continue statement.
18. Write a C program to show input and output of a string.
19. Write a C program to accept single string as parameter and reverse that string.
20. Write a C program to accept single string that can be in any case (lower or upper). It converts the string in lower case.

DP21T103-WINDOWS OPERATING SYSTEM-3

Total Hours: 48

UNIT-I
Windows Overview: History, understanding the OS architecture, Graphics interface, Benefits, Screen attributes: icons and bars, Mouse vs. keyboard input, Features and accessories of the Windows program, Objects and their properties.

[10Hours]

UNIT-II
Installing Windows: Exploring OS Editions, Planning Clean Installs vs. Upgrades, Understanding Installation Types, Using Virtualized Installations Program management: Creating, saving and editing documents, Concurrent execution of programs, Sharing data between programs
Folder and file management: Working with files, naming files, Copying and moving files, deleting files, Managing folders a. Creating, Viewing, Expanding and collapsing.

[12 Hours]

UNIT-III
Managing the Desktop: Understanding Desktop Features, Working with Gadgets, Changing Display Settings, Creating Shortcuts Control panel: Customizing screens, Screen colors, Pattern, spacing icons, selecting time/date, customizing printing, changing the print queue, configuring the printer(s), Adding printers. Working with fonts: changing, removing, adding, Customizing mouse and keyboard use, System   properties and the device manager. Management tools: DOS sessions, Explorer, Memory configuration, Safe mode Device Management: Understanding Device Drivers, Exploring Plug-and-Play Operations, Connecting and Managing Devices, Using Disk Defragmenter, Performing a Disk Cleanup, Scheduling Tasks. Managing Applications: Planning for Local and Network Applications, Install and uninstall applications, Configuring and Removing Applications, Using Group Policy for Application Control, Understanding Application Virtualization, The Difference between Services and Standard Applications.

[14 Hours]

UNIT-IV
Controlling Malware: Understanding Malware Types, Planning for Malware Protection, Understanding Microsoft Protection Methods Backup and Recovery: Planning for Backups, Testing Recovery Processes, Working with System Restore, Using Recovery Boot Options. Windows Update: Understanding Hotfixes and Service Packs, Planning for Windows Update and Microsoft Update.

[12 Hours]

REFERENCES:
1. Operating Systems: Internals and Design Principles by William Stallings, Fifth Edition Prentice Hall.
2. Microsoft Windows Operating System Essentials by Tom Carpenter Sybex Publishers.
3. An Introduction to Windows Operating System by Einar Krogh
4. Microsoft Windows Security Essentials 1st Edition by Darril Gibson

DP21P106-Operating System Lab-6(Practical)
Operating System Lab List

1. Show and write step of Installation and uninstallation of a software in windows operating system.
2. Show and write step of Installing Windows Operating System in a virtual box.
3. Explore the Start menu and Taskbar of windows operating system.
4. Do the following operation
   a) Create a Document and type a Resume.
   b) Format the text using different options.
   c) Cut Copy and Paste Operations with a document within and outside.
   d) Insert a picture in resume.
5. Do the following operation in notepad.
   a) Create a Document and type an Essay,
   b) Format the text using different options,
   c) Cut Copy and Paste Operations with a document within and outside.
6. Open paint application, do the following
   a) Draw a house in the paint using shapes and apply Color.
   b) Open image resize image to size below 20kb.
   c) Crop the image
7. Create a folder and subfolder within that folder and do the following operations using.
   a) Make a word document in it.
   b) Make a new folder in it.
   c) Rename folder.
   d) Move a document within a folder.
   e) Remove a document from a folder.
8. Implement various display properties by right clicking on a window desktop.
   a) Change the size of text, app and other items.
   b) Change display resolution.
   c) Change display orientation.
9. Do the following.
   a) Create shortcuts of the folder, applications installed to desktop.
   b) Create a new file by right clicking on desktop.
10. Implement various personalize properties by right clicking on a window desktop.
    a) Change the background.
    b) Change the themes.
    c) Change screen out time.
11. Explore task manager and
    a) End running process
    b) Show resource utilization by running application and performance.
    c) Start and stop services.
12. Create User account in windows and account settings.
13. Create folder, subfolder and remove directory using DOS commands.
14. Do the following by right clicking on desktop
    a) Change icon size to small, medium and large.
    b) Sort icons using date, type, size.

15. Create folder and data into it and compress folder using WinRAR and extract file from compressed file.
16. Explore windows security.
    a) Show account protection.
    b) Show virus protection using different scan option.
    c) Show firewall settings.
17. Explore ease of access change mouse pointer and keyboard settings.
18. Explore windows backup and recovery.
19. Explore Disk management and show its options.
20. Explore Device manager show its options.

DP21D107-**Mini Project 1:**
Student has to complete the mini project1 based on Lab4/Lab5/Lab6 with project report

DP21T201-PAGE MAKER AND ADOBE PHOTOSHOP -7

Total Hours: 48

UNIT-I

Introduction: Introduction to Page Maker Page Maker Icon and help, Tool Box, Styles, Menus etc., Different screen Views, Importing text/Pictures, Auto Flow, Columns, formatting text.

[12 Hours]

UNIT–II

Master Pages & customization: Master Pages and Stories, Story Editor, Menu Commands and short-cut commands, Spell check, Find & Replace, Import Export etc., Fonts, Points Sizes, spacing etc., Installing Printers, Scaling (Percentages), Printer setup Use of D.T.P. in Advertisements, Books & Magazines, News Paper, Table Editor.

[12 Hours]

UNIT–III

Introduction: Introduction to Adobe Photoshop & Documents, Various Graphic Files and Extensions, Vector Image and Raster Images, Various Colour Modes and Models. Layers & Filters: Introduction to Screen and Work Area, Photoshop Tools & Palettes, Layers Palette, Working with Layers, New Layer via Cut, New Layer via Copy, Working with Images, The Filter Menu, Filter Gallery, Extract Filter, Noise Filters, Sketch Filters.

[**14 Hours]**

UNIT–IV

Printing and Customization: Import, Export, Automate, Printing, Customize Workspace, Creating an Action.

[10 Hours]

REFERENCES:
1. PageMaker(R) 7: The Complete Reference by Carolyn Connally
2. Adobe PageMaker By Barnabas Crist Bal
3. Desktop Publishing Using PageMaker 6.0 Windows by Julia C. Bradley
4. Photoshop 7: The Complete Reference by Laurie Ulrich-Fuller
5. The Adobe Photoshop Layer by Richard Lynch
6. Introduction To Adobe Photoshop by Abigail J Morley

DP21P204-Page Maker & Adobe Photoshop Lab-10 (Practical)

Page Maker & Adobe Photoshop Lab list

PageMaker

1. Create a college Identity card
2. Create a wedding/invitation card
3. Create a pamphlet for any program to be conducted by an organization
4. Create a billing book
5. Create a newspaper report
6. Create your resume
7. Create a visiting card
8. Prepare various types of greeting card such as birthday card/ Diwali card etc
9. Design a Certificate
10. Type a Doc Using Story Editor
11. Newsletter Design (Page Layout Design)
12. Design a Letter Head

Adobe Photoshop

1. Design a passport size photo
2. Custom shapes creation
3. Merge two pictures into one Photoshop image
4. Convert color photo to black and white photo
5. Change the background in Photoshop
6. Apply filters and Effects to a photo
7. Removing a facial blemishes/mole.
8. Create a banner
9. Procedure to adjust the brightness and contrast of the picture so that it gives elegant look.
10. Calculate an animated GIF in Photoshop.

DP21T202-COREL DRAW

Total Hours: 48

UNIT-I

Introduction to CorelDRAW: Use and importance in Designing, Various Graphic Files and File Extensions, Vector Image and Raster Images, Introduction to Screen and Work Area.

[10 Hours]

UNIT–II

Introduction to Tools of CorelDRAW: Managing Palettes, Working with Images, Patterns and Textures, Working with Shapes, Colours and Fills, Image Rasterization and Editing, Transformation Menu. CorelDRAW Files: CorelDRAW Files and supporting documents, Import and Export of Files and File formats Page Setup and Designing, Using Styles and Templates, Working with Text, Formatting Text, Text Attributes.

[14 Hours]

UNIT–III

Page Layout and Layers: Designing Different Page Layouts, Column Layout, Special Effect to Objects and Texts, Contour Tool, Layout for News Paper and Magazines, Working with Layers Hiding/Showing Layers - Deleting Layers, Masking Layers.

[12 Hours]

UNIT–VI

Printing and Customization: Preparation of Visiting Cards & Invitation Cards, Shaping Dockers & Logo Design Introduction Brochure & Books, Introduction to Magazine Designing,   Web Photo Gallery Printing.

[12 Hours]

REFERENCES

1. Corel Draw x5 Unleashed, Foster D. Coburn III
2. Corel Draw The Official Guide by Gary David Bouton
3. Corel DRAW Jesse Russell Ronald Cohn.
4. Corel Draw Graphics Suite X4 Training Guide - Corel Draw Version by MC Sharma

Corel Draw - Lab Assignment List

1. Design triangles and decorative circles for the background using Corel Draw.
2. Adding colors to triangles and circles for the background using Corel Draw.
3. Creating the diamond shape and adding color to the diamond shape for the background using Corel Draw.
4. Adding coffee cup and adding banner to the logo using Corel Draw.
5. Create the background using rectangles and import the coffee cup logo using Corel Draw.
6. Create the text for the background of Coffee cup logo using Corel Draw.
7. Create the circles for the background of Coffee cup logo using Corel Draw.
8. Trace the bitmap using Corel Draw.
9. Replace the text from the object using Corel Draw.
10. Design 3D button with Ellipse tool, interactive fountain fill tool of Corel Draw Tools.
11. Design 3D looking text that can be used for heading or slide presentation using Corel Draw.
12. Design the Rainbow using Corel Draw.
13. Design the flower using Corel Draw.
14. Design the six-sided star using Corel Draw.
15. Design the House using Corel Draw.
16. Design the car using Corel Draw.
17. Design Colorful Floral Logo in Corel Draw.
18. Design Logo design using color styles.
19. Design the Stars using Blending effect.
20. Create a Neon Tubing Type effect using Corel Draw.

DP21T203 –TALLY AND SPSS -9

Total Hours: 48

Unit-I

Manual Accounting: Accounting, Need for accounting, Types of accounts, Rules of debit & credit, Accounting principles or standards, Accounting concepts, Accounting conventions, Accounting system, Recording transactions in journal, Ledger (Classifying), Trial balance, Final Accounts, Trading & P/L statement, Balance sheet, Adjustment Entries, Summary.

[10 hours]

UNIT-II

Computerized Accounting: Installing Tally – Requirements & procedure for installing tally, Education mode, Changing default settings through tally. Opening screen of tally, Creating Company, shutting a company, Altering/Modifying existing Company, Buttons on the button Panel Accounting Information: Menu related to accounts, Groups, Managing Groups, Creating new group & sub group, Displaying, altering & deleting a group, Creating, Displaying & altering multiple groups. Ledgers: Displaying, altering & deleting single and Multiple Ledgers. Cost categories & Cost centers: Creating, Displaying, Altering & Deleting a cost category and cost centers, Vouchers in Tally, Inventory information, stock categories, stock item, Multiple Stocks, Multiple Godowns, reports and internet capabilities.

[12 hour]

UNIT-III

Introduction to PASW: Menus, Tool Bar, Dialogue Box, Designate Window, Basic steps for performing any Statistical Procedure Data Management: Creating a Data File, Defining Variables, Entering & Saving Data, Opening an existing Data File, Inserting Variables, Inserting Cases, Identifying Duplicate Cases, Identifying Unusual Cases, Sorting Cases, Merging a File: Add Cases, For Adding Variables, Data Aggregation, Splitting File, Selecting Cases, Listing Cases.

[12 hours]

UNIT-IV

Data Transformation: Computing a New Variable, Recoding Variables, Types of measurement Scales, Descriptive Statistics, Crosstabs. Describing Data Graphically: Line Chart, Pie Chart, Bar Chart, Histogram and the Standard Normal Curve, Box Plot, Scatter Diagram, P-P Plot, Q-Q Plot, Chart Builder, Formatting Charts. One Sample t-Test: Hypothesis testing, Independent Sample t-Test, Sample t-Test, Procedure for Testing for Differences in Means between Groups, Interpretation of Null Results. Nonparametric statistics: Runs Test, Chi-Square Test, Mann-Whitney U Test, Wilcoxon Signed Rank Test, Kruskal-wallis Test. **[14 Hours]**

REFERENCES
1. Tally ERP 9 by Asok K. Nadhani , BPB Publishers.
2. Computerized Accounting Using Tally.ERP 9 by Tally Education Private Limited.
3. SPSS in Simple Steps by Kiran Pandya Smruti Bulsari Sanjay Sinha, Dreamtech press (201l).
4. SPSS: A User-Friendly Approach by Jeffery E. Aspelmeier, Thomas W. Pierce ,Worth Publishers (2009).
5. Statistical Methods for Practice and research: A Guide to Data Analysis using SPSS 0002 edition 2009.
6. Visual Approach to SPSS for windows: A Guide to SPSS 17.0 by Leonard D.Stern, Pearson 2009.

Tally and SPSS Lab List

1. Create a company with the name "ASH" Pvt. Ltd. List out the steps in creating company. List out all the functions key used here.
2. Create ledger accounts for ASH Pvt. Ltd. List out the steps and also the function keys.
3. Create vouchers for the various transactions of ASH Company.
4. Enter the following transactions in the journal and ledger of Murali of New Delhi and prepare Balance Sheet:

   March 2001

   1 Murali commenced business with cash 90,000

   4 Purchased goods for cash 6,000

   5 Deposited into bank 40,000

   6 Withdrew from bank for office use 4,500

   8 Sold goods to Raja 4,800

   12 Purchased goods on credit from Kathar 1,380

   15 Received from Raj Rs.4,650 and allowed him discount 150

   20 Cash sales 7,200

   28 Paid to Kathar in full settlement 1,300

   30 Paid rent 300 and Paid salary 1,600

   Accounts are closed on 31st March 2001.

5. Journalize the following transactions in the books of Mr. Chandran and create necessary ledger entries and voucher entries also. Create the company with accounts only:

   April 2001

   1 Started business with cash Rs.40,000 and furniture Rs.10,000.

   5 Paid tuition fee of the son Rs.1,000

   8 Paid household expenses Rs.1,400.

   10 Sold personal car for Rs.18,000 and the amount is brought into the business.

   15 Withdrew goods for personal use Rs.2,000.

   16 Sold goods to Navin on credit Rs.8,000.

   18 Sold old typewriter Rs.1,000.

   19 Purchase goods on credit from Ramesh Rs.20,000

   20 Received interest on investment Rs.6,000.

   22 Received commission from Manohar Rs.2,000.

   23 Receive a cheque from Navin Rs.5,000.

   25 Issued a cheque to Ramesh Rs.12,000

   26 Received cash from Anand on account Rs.4,000

   27 Paid cash to Bhagwan on account Rs.1,000.

   28 Returned goods to Ramesh Rs.1,000.

   29 Navin returned goods Rs.500.

   30 Paid rent Rs.1,000 and Paid salaries Rs.12,000.

6. Journalise the following transactions, post the same in relevant ledger account and Prepare Balance Sheet.

    June 1998

    June 1 Karthik commenced business with Rs.20,000.

    June 2 Paid into bank Rs.5,000.

    June 3 Purchased Plant worth Rs.10,000 from Modi & Co.

    June 4 Purchased goods worth Rs. 5,000 form Anwar.

    June 6 Goods worth Rs.4,000 sold to Anbu

    June 8 Sold goods worth Rs.2,000 for cash.

    June 10 Goods returned by Anbu Rs.50.

    June 15 Paid rent Rs.250.

    June 18 Withdrawn from bank for office use Rs. 2,500.

    June 20 Paid Salaries Rs.1,800.

    June 25 Withdrawn for personal use Rs.250.

    June 26 Goods returned to Anwar Rs.100.

    June 27 Paid for office furniture Rs.1,500 by cheque.

    June 28 Received Rs.3,900 cash from Anbu and discount allowed Rs.50.

    June 29 Paid Anwar on account Rs.4,800 and discount allowed by him Rs.100.

7. Journalize the following transactions in the books of ASH and create necessary ledger entries and voucher entries also. Create the company with accounts only. April 2019

1. Commenced business with cash - 25,000	11. Sundar returned goods to us - 200
2. Purchased office furniture for cash - 2,000	12. Received for cash sales - 600
3. Paid for office stationary – 100	13. Paid for cash purchases - 900
4. Bought goods from Raju and co. for credit - 1,000	14. Paid for sundry expenses – 50
	15. Received commission from Singh & co 350
5. Purchased goods from Vijay for cash - 1,000	16. Paid landlord office rent - 250
6. Sold goods to Sundar on credit - 1,5000	17. Gave loan to Shankar trading co - 4,000
7. Sold goods to Manohar for cash - 500	
8. paid cash to Raju and co. on account - 1,000	18. Paid salary to manager - 700
9. Received cash from Sundar on account -800	19. Paid advertisement charges - 100
	20. Cash withdrawn for personal use 100
10. Returned to Raju and co – 300	

8. Journalize the following transactions in the books of KUD Pvt Ltd and create necessary ledger entries and Trail balance. Create the company with accounts only.

    April 2020

    i) On l-April-2020 Mr A started business with Rs. 1 Lakh and other transaction for the month are

    ii) On 2- April purchase furniture for cash Rs.7000/-

    iii) On8- April purchase goods for cash Rs. 20001 and for credit Rs. 1000/- from Mr B's retail stores

    iv) On l4-April sold goods to Mr C Rs. 120001- and cash sale Rs. 5000/-

    v) On 18- April owner withdraw of worth Rs.2000/- for personal use

    vi) On22-April paid Mr B's retail store Rs. 500/-

    vii) On26-april received Rs. 10000/- from Mr C.

    viii)   On 30-April paid salary expenses Rs. 2000/-

9. From the following particulars create cost centers ledger accounts and vouchers List out the steps to create cost centers.

1. Commenced business with cash-2,00,000	12. Electricity charges paid-3,000
2. Deposited into bank-50,000	13. Telephone bill paid from April to May- 6,000
3. 5 tons of paper purchased for printing of text books form west coast paper mill with bill No. 180 - 96,000	14. Traveling expenses of manager-6,000
	15. Office rent paid to Mr. Arun-3,000
4. 1 tone paper returned to west coast paper mill- 18,000	16. Miscellaneous expenses-600
	17. Printing of ink bottles purchased -1,800
5. Art work charges of English text books paid-5,000	18. Art work charges paid for Hindi text books- 28,000
6. Office stationary purchased-600	
7. Printing ink bottle purchased from Karthik Enterprises -2,400	19. Cash withdrawn from office use and personal use-5,000, 2,000
	20. Wages paid-1,800
8. 1 ton paper purchased from west coast paper mill with bill no. 210 for Hindi text books-30,000	21. Advertisement charges-900
	Allocate the expenses equally and find out the cost of each text book: English, Hindi and Kannada. English books 5,000, Kannada books-4,300, Hindi books-4,500
9. discount received from the above-500	
10. Paid salary to staff-9,000	
11. Unloading charges paid-900	

10. Journalize the following transactions in the books of Mr. Mohan for the month of April 2009.
    1. Mohan started business with cash Rs. 5000
    2. Deposited in the Bank Rs. 500
    3. Furniture purchased for Cash Rs. 200
    4. Purchased goods for cash Rs. 400
    5. Purchased goods from Ramnarayan Rs. 1000
    6. Goods sold to Ram and Co. for cash Rs. 600
    7. Goods sold on credit to Ramesh Rs. 300
    8. Received cash from Ramesh Rs. 300
    9. Paid rent 100
    10. Paid salary 200
    You are required to do the following.
        a. Create a company with the name Mohan Pvt. Ltd. And list out all the steps on the role of the function keys
        b. Create a necessary accounts and the ledger required
        c. Create necessary vouchers and journalize the transactions
        d. Report of the trading account and profit and loss accounts and balance sheet is to be displayed.

SPSS

11.

Reg. No	IA-1	IA-2	IA-3
101	44	50	59
102	55	78	70
103	70	85	87
104	55	85	92

a. Create a new SPSS data set!

b. Create a Line Chart for all above data.

12.

Month	2015	2016	2017
Jan	200	2000	2026
Feb	800	1524	500
Mar	782	4022	900
Apr	600	1500	1000
May	1500	2500	1450
Jun	250	750	850

a. Create a new SPSS data set!

b. Create Descriptive Statistics for above data.

13.

Period	Product 1	Product 2	Product 3	Total
Jan	35	40	50	125
Feb	46	56	40	142
Mar	70	50	40	160

a. Create a new SPSS data set.

b. Create a Bar Chart for 3 different periods.

14.

Period	Product 1	Product 2	Product 3	Total
Jan	35	40	50	125
Feb	46	56	40	142
Mar	70	50	40	160

a. Create a new SPSS data set.

b. Create a Pie Chart for Total.

15.

Period	Product 1	Product 2	Product 3	Total
Jan	35	40	50	125
Feb	46	56	40	142
Mar	70	50	40	160

a. Create a new SPSS data set.

b. Create a Stacked Bar Chart for 3 different periods.

16.

Period	Product 1	Product 2	Product 3	Total
Jan	35	40	50	125
Feb	46	56	40	142
Mar	70	50	40	160

a. Create a new SPSS data set.
b. Create a Clustered Bar Chart for 3 different periods.

17.

Period	Product 1	Product 2	Product 3	Total
Jan	35	40	50	125
Feb	46	56	40	142
Mar	70	50	40	160
Apr	75	40	35	150
May	40	45	35	120

a. Create a new SPSS data set.
b. Create a Histogram for 5 different periods.

18.

RollNo	Name	Gender	Score of Entrance Test	Percentage
1	Ram	Male	55	69
2	Raju	Male	50	60
3	Preeti	Female	55	55
4	Raj	Male	60	69
5	Rani	Female	54	56
6	Reetu	Female	56	54
7	Vinay	Male	68	60
8	Vani	Female	65	69

a. Create a new SPSS data set!
b. Arrange the above list in Rank wise

19. for the following table

Student Name	Gender	IQ	Weight
Jimmy	M	80	220
Chris	M	110	185
Jhon	M	100	160
Andrew	M	75	195
Stevev	M	120	200
Mary	F	90	85
Liz	F	85	75
Susan	F	80	86
Kay	F	60	89

a. Create a new SPSS data set.
b. Arrange the data IQ an Ascending order and Weight in Descending order.

20. Listed below are the expectancy in years at birth of males and females in the 30 most populous countries.

Male	
68.7	65.2
45.8	57.6
48.6	59.9
59.2	51.6
36.5	69.0
68.3	41.9
47.5	57.6
69.0	72.2
63.0	62.8
37.2	53.7
56.9	66.9
49.8	69.7
53.6	53.7
64.0	67.8
43.2	41.9

Female	
76.5	71.4
46.6	61.0
51.5	63.3
62.7	53.8
39.6	76.9
74.8	40.6
47.5	57.4
74.9	77.4
67.0	66.6
36.7	48.8
60.0	74.6
53.3	75.0
58.7	53.7
74.0	73.0
46.0	45.1

a. Calculate the mean, median, and mode for females and males.
b. Use of box plot to show the distribution of the data within each group.

DP21D207-Mini Project 2:
Student has to complete the mini project1 based on Lab10/Lab11/Lab12 with project report.

PATTERN OF THEORY QUESTION PAPER FOR PGDCA
(60 marks for semester end Examination)
Question paper contains total 8 questions divided into two parts Part-A and Part-B.
Student has to answer any 5 questions choosing at least two full questions from each part.
(Each question may have sub question)
Total: 60 Marks
Note: Proportionate weightage shall be given to each unit based on number of hours prescribed.