| Paper: **MN2A** | Year : **First** | Semester -II |
|---|---|---|

| Subject : **Mathematics** | |
|---|---|
| Course Code : **MN2A** | Course Title : **Computer Basics & Multimedia** |

**Course Learnimg Outcomes:**

**CO1** : Develops basic understanding of computers and its applications.
**CO2** : Develops the ability to work with computers using various networks/Internet.
**CO3** : Develops the ability to work with computers using multimedia editing tools.

| Credit: **3+1 ( Th+ Pr. )** | Max. Marks : **60+15+25** |
|---|---|
| Full Marks : **60** | Time : **3 Hours** |

| Unit | Topic | No. of Lectures |
|---|---|---|
| I | **INTRODUCTION :** Introduction to computer, Basics of computers and its operation, History of computer, Capabilities and limitations of computers, Types of computers, Hardware and Software, various storage devices. | 10 |
| II | **WINDOWS OPERATING SYSTEM:** Basics of operating system, The User Interface (Task Bar, Icons, Menu, running an application), File and Directory Management (Creating and renaming of files and directories), Operating System Simple Setting (Changing System Date and Time Changing Display Properties, To Add or Remove a Windows Component, Changing Mouse Properties). | 10 |
| III | **UNDERSTANDING WORD PROCESSING AND SPREAD SHEET:** Word Processing Basics, Opening and Closing Documents, Text creation and manipulation, Formatting the Text, Elements of Electronic Spread Sheet, Manipulation of Cells. | 10 |
| IV | **MULTIMEDIA:** Introduction to multimedia, components, uses of multimedia, multimedia applications, virtual reality. **Text:** Fonts & Faces, Using Text in Multimedia, Font Editing & Design Tools, Hypermedia & Hypertext. **Images:** Still Images – bitmaps, vector drawing, 3D drawing & rendering, natural light & colors, computerized colors, color palettes, image file formats. **Sound:** Digital Audio, MIDI Audio, MIDI vs Digital Audio, Audio File Formats. **Video:** How video works, analog video, digital video, video file formats, video shooting and editing. | 15 |

2·6·23

**Sessional Internal Assesment ( SIA ) Full Marks – 15 Marks**

**A - Internal written Examination - 10 Marks ( 1 Hrs )**

**B – Over All Performance including Regularity – 05 Marks**

**Books for reference :**

1. Peter Norton, Introduction to Computers, sixth Edition, Tata McGraw Hill (2007)
2. Deborah Morley, Charles S.Parker, Understanding Computers today and tomorrow, 11th Edition, Thomson (2007).
3. Tay Vaughan, —Multimedia: Making it work‖, TMH, Eighth edition.2011
4. Ralf Steinmetz and KlaraNaharstedt, —Multimedia: Computing, Communications Applications, Pearson.2012
5. Keyes, —Multimedia Handbook, TMH,2000.
6. K. Andleigh and K. Thakkar, —Multimedia System Design, PHI.2013

## Practical :

Practical exercises based on MS Office/ Open Office tools using document preparation and spreadsheet handling packages & practical exercises based on concepts listed in theory using Flash/ GIMP/ PhotoShop/ Animation Tools/ Image Editors/ Video Editors

**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, 2022.

    (a) Font specifications for Title (Grocery List): 14-point Arial font in bold and italics.
    (b) The headings of the columns should be in 12-point and bold.
    (c) The rest of the document should be in 10-point Times New Roman.
    (d) Leave a gap of 12-points after the title.

2. Create a **telephone directory.**

    (a) The heading should be 16-point Arial Font in bold
    (b) The rest of the document should use 10-point font size
    (c) Other headings should use 10-point Courier New Font.
    (d) The footer should show the page number as well as the date last updated.

Sessional Internal Assesment ( SIA ) Full Marks – 15 Marks

A - Internal written Examination -  10 Marks ( 1 Hrs )

B – Over All Performance including Regularity – 05 Marks

**Books for reference :**

1. Peter Norton, Introduction to Computers, sixth Edition, Tata McGraw Hill (2007)
2. Deborah Morley, Charles S.Parker, Understanding Computers today and tomorrow, 11th Edition, Thomson (2007).
3. Tay Vaughan, —Multimedia: Making it work‖, TMH, Eighth edition.2011
4. Ralf Steinmetz and KlaraNaharstedt, —Multimedia: Computing, Communications Applications, Pearson.2012
5. Keyes, —Multimedia Handbook, TMH,2000.
6. K. Andleigh and K. Thakkar, —Multimedia System Design, PHI.2013

## Practical :

Practical exercises based on MS Office/ Open Office tools using document preparation and spreadsheet handling packages & practical exercises based on concepts listed in theory using Flash/ GIMP/ PhotoShop/ Animation Tools/ Image Editors/ Video Editors

**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, 2022.

    (a) Font specifications for Title (Grocery List): 14-point Arial font in bold and italics.
    (b) The headings of the columns should be in 12-point and bold.
    (c) The rest of the document should be in 10-point Times New Roman.
    (d) Leave a gap of 12-points after the title.

2. Create a **telephone directory.**

    (a) The heading should be 16-point Arial Font in bold
    (b) The rest of the document should use 10-point font size
    (c) Other headings should use 10-point Courier New Font.
    (d) The footer should show the page number as well as the date last updated.

3. Design a **time-table form** for your college.

   (a) The first line should mention the name of the college in 16-point Arial Font and should be bold.
   (b) The second line should give the course name/teacher's name and the department in 14-point Arial.
   (c) Leave a gap of 12-points.
   (d) The rest of the document should use 10-point Times New Roman font.
   (e) 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.

   (a) The title of the book should appear in bold using 20-point Arial font.
   (b) The name of the author and his qualifications should be in the center of the page in 16-point Arial font.
   (c) At the bottom of the document should be the name of the publisher and address in 16-point Times New Roman.
   (d) The details of the offices of the publisher (only location) should appear in the footer.

5. Create the following one-page documents.

   (a) Compose a note inviting friends to a get-together at your house, including a list of things to bring with them.
   (b) Design a certificate in landscape orientation with a border around the document.
   (c) Design a Garage Sale sign.
   (d) Make a sign outlining your rules for your bedroom at home, using a numbered list.

## MS Excel

1. Enter the Following data in Excel Sheet

### REGIONAL SALES PROJECTION

| State | Qtr1 | Qtr2 | Qtr3 | QTR4 | Qtr Total | Rate Amount |
|-------|------|------|------|------|-----------|-------------|
| Delhi | 2020 | 2400 | 2100 | 3000 | | 15 |
| Punjab | 1100 | 1300 | 1500 | 1400 | | 20 |
| U.P. | 3000 | 3200 | 2600 | 2800 | | 17 |
| Haryana | 1800 | 2000 | 2200 | 2700 | | 15 |
| Rajasthan | 2100 | 2000 | 1800 | 2200 | | 20 |

**TOTAL AVERAGE**

(a) Apply Formatting as follow:

    i.      Title in TIMES NEW ROMAN
    ii.     Font Size - 14
    iii.    Remaining text - ARIAL, Font Size -10
    iv.    State names and Qtr. Heading Bold, Italic with Gray Fill Color.
    v.     Numbers in two decimal places.
    vi.    Qtr. Heading in center Alignment.
    vii.   Apply Border to whole data.

(b) Calculate State and Qtr. Total

(c) Calculate Average for each quarter

(d) Calculate Amount = Rate * Total.

2. Given the following worksheet

|   | A | B | C | D |
|---|---|---|---|---|
| 1. | Roll No. | Name | Marks | Grade |
| 2. | 1001 | Sachin | 99 | |
| 3. | 1002 | Sehwag | 65 | |
| 4. | 1003 | Rahul | 41 | |
| 5. | 1004 | Sourav | 89 | |
| 6. | 1005 | Har Bhajan | 56 | |

Calculate the grade of these students on the basis of following guidelines:

| If Marks | Then Grade |
|---|---|
| >= 80 | A+ |
| >= 60 < 80 | A |
| >= 50 < 60 | B |
| < 50 | F |

3. Given the following worksheet

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | Salesman | | | Sales in (Rs.) | | | |
| | No. | Qtr1 | Qtr2 | Qtr3 | Qtr4 | Total | Commission |
| 1. | S001 | 5000 | 8500 | 12000 | 9000 | | |
| 2. | S002 | 7000 | 4000 | 7500 | 11000 | | |
| 3. | S003 | 4000 | 9000 | 6500 | 8200 | | |
| 4. | S004 | 5500 | 6900 | 4500 | 10500 | | |
| 5. | S005 | 7400 | 8500 | 92008 | 8300 | | |
| 6. | S006 | 5300 | 7600 | 9800 | 6100 | | |

Calculate the commission earned by the salesmen on the basis of following:

| If Total Sales | Commission |
|---|---|
| < 20000 | 0% of sales |
| > 20000 and < 25000 | 4% of sales |
| > 25000 and < 30000 | 5.5% of sales |
| > 30000 and < 35000 | 8% of sales |
| >= 35000 | 11% of sales |

The total sale is sum of sales of all the four quarters.

4. Use an array formula to calculate Simple Interest for given principal amounts given the rate of Interest and time

| Rate of Interest | 8% |
|---|---|
| Time | 5 Years |
| Principal | Simple Interest |
| 1000 | ? |
| 18000 | ? |
| 5200 | ? |

5. The following table gives year wise sale figure of five salesmen in Rs.

| Salesman | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|
| S1 | 10000 | 12000 | 20000 | 50000 |
| S2 | 15000 | 18000 | 50000 | 60000 |
| S3 | 20000 | 22000 | 70000 | 70000 |
| S4 | 30000 | 30000 | 100000 | 80000 |
| S5 | 40000 | 45000 | 125000 | 90000 |

(a) Calculate total sale year wise.
(b) Calculate the net sale made by each salesman
(c) Calculate the maximum sale made by the salesman
(d) Calculate the commission for each salesman under the condition. If total sales >4,00,000 give 5% commission on total sale made by the salesman otherwise give 2% commission.
(e) Draw a bar graph representing the sale made by each salesman.
(f) Draw a pie graph representing the sale made by salesman in 2000.

**Implement the followings using Flash-**

1. Create an animation using the tools panel and the properties panel to draw the following–
Line, oval, circle, rectangle, square, pencil, brush, lasso tool.
2. Create an animation using text tool to set the font, size, color etc.
3. Create an animation using **Free transform tool** that should use followings-
Move Objects
Skew Objects
Stretch Objects
Rotate Objects
Stretch Objects while maintaining proportion
Rotate Objects after relocating the center dot
4. Create an animation using layers having following features-Insert layer, Delete layer, guide layer, Mask layer.
5. Modify the document (changing background color etc.) using the following tools-
Eraser tool
Hand tool Ink
bottle tool
Zoom tool
Paint Bucket tool
Eyedropper tool

**Experiments – 15 Marks**
**Viva Voice- 05 Marks**
**Practical Records – 05 Marks**