



COMPUTER APPLICATIONS

12th Standard

Strictly as per the Reduced (Prioritised) Syllabus
released on 13th August, 2021 (G.O.(Ms).No126)

**PUBLIC
EXAM**
Edition 2021-22

Salient Features

- Complete Solutions to Textbook Exercises
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- Sura's Model question paper with answers are given based on the reduced syllabus



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Chennai

2021-22 Edition

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PREFACE

*“ The woods are lovely, dark and deep. “
But I have promises to keep, and
miles to go before I sleep - Robert Frost*

Respected Principals, Correspondents, Head Masters / Head Mistresses, Teachers,

From the bottom of our heart, we at SURA Publications sincerely thank you for the support and patronage that you have extended to us for more than a decade.

It is in our sincerest effort we take the pride of releasing **SURA's Computer Applications Guide** for +2 Standard – Edition 2021-22. This guide has been authored and edited by qualified teachers having teaching experience for over a decade in their respective subject fields. This Guide has been reviewed by reputed Professors who are currently serving as Head of the Department in esteemed Universities and Colleges.

With due respect to Teachers, I would like to mention that this guide will serve as a teaching companion to qualified teachers. Also, this guide will be an excellent learning companion to students with exhaustive exercises and in-text questions in addition to precise answers for textual questions.

In complete cognizance of the dedicated role of Teachers, I completely believe that our students will learn the subject effectively with this guide and prove their excellence in Board Examinations.

I once again sincerely thank the Teachers, Parents and Students for supporting and valuing our efforts.

God Bless all.

Subash Raj, B.E., M.S.

- Publisher

Sura Publications

All the Best

**Strictly as per the Reduced (Prioritised) Syllabus
released on 13th August, 2021 (G.O.(Ms).No126)**

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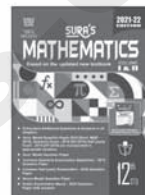
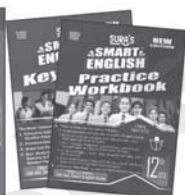
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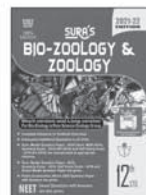
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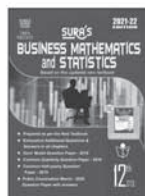
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CHAPTER

1

MULTIMEDIA AND
DESKTOP PUBLISHING

EVALUATION

PART - I

CHOOSE THE CORRECT ANSWER

- _____ refers to any type of application that involves more than one type of media such as text, graphics video animation and sound.
(a) an executable file [Govt. MQP-2019]
(b) desktop publishing
(c) multimedia
(d) hypertext [Ans. (c) multimedia]
- One of the disadvantages of the multimedia is its _____.
(a) cost (b) adaptability
(c) usability (d) relativity
[Ans. (a) cost]
- Expand JPEG
(a) Joint Photo Experts Gross
(b) Joint Photographic Experts Group
(c) Joint Processor Experts Group
(d) Joint Photographic Expression Group
[Ans. (b) Joint Photographic Experts Group]
- You need hardware, software and _____ to make multimedia.
(a) network (b) compact disk drive
(c) good idea
(d) programming knowledge
[Ans. (b) compact disk drive]
- Find the odd one on the following which is not an image format
(a) TIFF (b) BMP
(c) RTF (d) JPEG [Ans. (c) RTF]

- The live telecasting of real time program through Internet is known as ____ [HY-2019]
(a) web casting (b) web hosting
(c) data manipulation (d) none of the above
[Ans. (a) web casting]
- GIF use _____ color look up table
(a) 8 bit (b) 13 bit
(c) 8 MB (d) 13 MB
[Ans. (b) 13 bit]
- RTF file format was introduced by _____
(a) TCS (b) Microsoft
(c) Apple (d) IBM
[Ans. (b) Microsoft]

PART - II

SHORT ANSWERS

- Define Multimedia and their features. [Sep-2020]
Ans. (i) The word multimedia consists of two words "multi" and "media" which means that multiple forms of media are combined to gather and provide services like storage, communication, presentation and Input/output interactions of text, video, image, graphics and audio.
Features of Multimedia :
(i) The information they handle is represented digitally.
(ii) Multimedia systems are integrated computer controlled and usually interactive.

6. List out image file formats.

- Ans.** (i) TIFF – Tagged Image File Format
 (ii) BMP – Bitmap
 (iii) DIB – Device Independent Bitmap
 (iv) GIF – Graphic Interchange Format
 (v) JPEG – Joint Photographic Experts Group
 (vi) TGA – Targa
 (vii) PNG – Portable Network Graphics

7. List out audio file formats. [Govt. MQP-2019]

- Ans.** (i) WAV – Wave form Audiofile Format
 (ii) MP3 – MPEG Layer - 3 Format
 (iii) OGG
 (iv) AIFF – Audio Interchange File Format
 (v) WMA – Windows Media Audio
 (vi) RA – Real Audio Format

8. List out video file formats.

- Ans.** (i) AVI – Audio / Video Interleave
 (ii) MPEG – Moving Picture Experts Group

9. Define Multimedia Production.

- Ans.** (i) In the multimedia application, after the pre-production activities, the production phase starts. This phase includes the activities like background music selection, sound recording and so on.
 (ii) Text is incorporated using OCR software, Pictures shot by digital camera, Video clips are shot, edited and compressed.

10. List out Multimedia Production team members.

- Ans.** The team comprises of members playing various roles and responsibilities like Script writer, Production manager, Editor, Graphics Architect, Multimedia Architect and Web Master.

PART - III

EXPLAIN IN BRIEF ANSWER

3. Write roles and responsibilities of Production team members.

- Ans.** (i) **Production Manager:** In a multimedia production, the role of production manager is to define, and coordinate, the production of the multimedia project in time and with full quality.
 (ii) **Content Specialist:** Content specialist is responsible for performing all research activities concerned with the proposed application's content.

- (iii) **Script Writer:** The script writer visualizes the concepts in three dimensional environments and if needed uses the virtual reality integration into the program.

- (iv) **Text Editor:** The Text Editor checks the flow of text, structure and correct it grammatically.

- (v) **Multimedia Architect:** The multimedia architect integrates all the multimedia building blocks using an authoring tools.

4. Describe the various file formats in multimedia. [HY-2019]

Ans. (i) Text File Formats

- (a) RTF (Rich Text Format)
 (b) Plain text

(ii) Image File Formats

- (a) TIFF (Tagged Image File Format)
 (b) BMP (Bitmap)
 (c) DIB (Device Independent Bitmap)
 (d) GIF (Graphics Interchange Format)
 (e) JPEG (Joint Photographic Experts Group)
 (f) TGA (Targa)
 (g) PNG (Portable Network Graphics)

(iii) Digital Audio File Formats

- (a) WAV (Waveform Audio File Format)
 (b) MP3 (MPEG Layer-3 Format)
 (c) OGG
 (d) AIFF (Audio Interchange File Format)
 (e) WMA (Windows Media Audio)
 (f) RA (Real Audio Format)

(iv) Digital Video File Formats

- (a) AVI (Audio/Video Interleave)
 (b) WMV (Windows Media Video)
 (c) FLV (Flash Video)
 (d) 3GP
 (e) MPEG (Moving Picture Experts Group)

5. Explain animation industry and their scope.

- Ans. (i)** The Indian animation industry encompasses traditional 2D animation, 3D animation and visual effects for feature films.
 (i) In 1956, Disney studios animator clair weeks who had worked on Bambi, was invited to Films Division of India in Mumbai to establish and train the country's first animation studio as part of the American technical co-operation mission.



- (ii) Indian animation industry is anticipated to grow faster than the IT industry.
- (iii) The industry has grown to a multibillion net worth standard.
- (iv) The manpower crunch needs to be decreased with animators.
- (v) There are hundreds and thousands of job opportunities lying around open for animators.
- (vi) Work opportunities for quality animators and related professionals exist in the following sectors :-
 - (a) Advertising
 - (b) Online and Print News Media
 - (c) Film & Television
 - (d) Cartoon production
 - (e) Theater
 - (f) Video Gaming
 - (g) E-learning

PART - IV

EXPLAIN IN DETAIL:

1. Explain in detail Process of Multimedia.

[QY-2019; Sep-2020]

Ans. Following are the phases for development of complex multimedia projects.

(1) Conceptual Analysis and Planning :

- (i) The process of multimedia making begins with a conceptual ignition point.
- (ii) Conceptual analysis identifies a appropriate theme, budget and content availability on that selected theme.
- (iii) Additional criteria like copyright issues also are considered in this phase.

(2) Project design :

- (i) Once the theme is finalized objectives, goals, and activities are drawn for the multimedia project.
- (ii) General statements are termed as goals. The specific statements in the project is known as the objectives.
- (iii) Activities are series of actions performed to implement an objective. These activities contribute to the Project design phase.

(3) Pre-production :

Based on the planning and design, it is necessary to develop the project.

(4) Budgeting :

Budgeting for each phases like consultants, hardware, software, travel, communication and publishing is estimated for all the multimedia projects.

(5) Multimedia Production Team :

- (i) The production team for a high end multimedia project requires a team efforts.
- (ii) The team comprises of members playing various roles and responsibilities like Script writer, Production manager, Editor, Graphics Architect, Multimedia Architect and Web Master.

(6) Hardware/Software Selection :

- (i) All multimedia Application requires appropriate tools to develop and playback the application.
- (ii) Hardware includes the selection of fastest CPU, RAM and huge monitors, sufficient disc for storing the records.

(7) Preparing the structure:

- (i) A detailed structure must have information about all the steps.
- (ii) This structure defines the activities, responsible person and the start/end time for each activity.

3. Explore the opportunities Animation filed movie industry. [QY-2019]

- Ans.**
- (i) In the past, students that complete an animation course or a visual effects course could find job opportunities only in the film industry.
 - (ii) In India, the VFX domain, or the animation and visual effects industry, has been growing stronger and stronger in recent years.
 - (iii) Animation and visual effects requirements for massive international projects such as HBO's top TV series and Marvel's hits Infinity War and Black Panther was outsourced to Indian companies in Mumbai and Pune.



- (iv) The surge in demand for animation and visual effects experts has led to a significant increase in the number of students enrolling for a VFX course.
- (v) As such, a student that completes a 3D animation course can hope to build a rewarding and satisfying career in the Media and Entertainment field these days.
- (vi) The timeless classics Tom and Jerry and Mickey Mouse created a milestone but the legacy is not disappointing.
- (vii) Indian animation has risen from an amateur piece of craft like “The Banyan Deer” to the million rupees project “Chhota Bheem”.
- (viii) POGO, the leading cartoon channel in India is the most successful entertainment channel for kids.
- (ix) Indian animation industry is anticipated to grow faster than the IT industry.
- (x) The industry has grown to a multibillion net work standard.
- (xi) As a result of the growing demand in industry, the scope of animation course in tremendous.
- (xii) The number of VFX artists and animators that worked on Baahubali was around 750.
- (xiii) Ex. For Top animates Movies : Spider-Man, Incredibles 2, Zootopia, Inside Out, Toy Story 3, Finding Nemo, Frozen, etc.

4. Explain in detail about production team Roles and Responsibilities. [HY-2019]

Ans. Production Manager:

- (i) In a multimedia production, the role of production manager is to define, and coordinate, the production of the multimedia project in time and with full quality.
- (ii) The production manager should be an expertise in the technology expert, good at proposal writing, good communication skills and budget management skills.
- (iii) Also must have experience in human resource management and act as an efficient team leader.

Content Specialist :

- (i) Content specialist is responsible for performing all research activities concerned with the proposed application's content.
- (ii) Program content refers to projects information, graphics, data or facts presented through the multimedia production.

Script Writer :

- (i) Video and film scripts represents a linear sequence of events.
- (ii) The script writer visualizes the concepts in three dimensional environments and if needed uses the virtual reality integration into the program.

Text Editor :

- (i) The content of a multimedia production always must flow logically and the text should always be structured and correct grammatically.
- (ii) Text and narration is an integrated part of the application.

Multimedia Architect :

The multimedia architect integrates all the multimedia building blocks like graphics, text, audio, music, video, photos and animation by using an authoring software.

Computer Graphic Artist :

The role of Computer Graphic Artist is to deal with the graphic elements of the programs like backgrounds, bullets, buttons, pictures editing, 3-D objects, animation, and logos etc.

Audio and Video Specialist :

- (i) The roles of these specialists are needed for dealing with narration and digitized videos to be added in a multimedia presentation.
- (ii) They are responsible for recording, editing sound effects and digitizing.

5. Explain about different file formats in multimedia files. [Mar-2020]

Ans. File Formats for Multimedia : The following is an outline of current file formats used for the production and delivery of multimedia data.

(1) Text Formats:

RTF :

Rich Text Format is the primary file format introduced in 1987 by Microsoft with the specification of their published products and for cross-platform documents interchange.

Plain text :

- (i) Plain text files can be opened, read, and edited with most text editors.
- (iii) Commonly used are Notepad (Windows), Gedit or nano (Unix, Linux), TextEdit (Mac OSX) and so on.

(2) Image Formats :

TIFF (Tagged Image File Format) :

- (i) This format is common in desktop publishing world (high quality output), and is supported by almost all software packages.



- (ii) Recent versions of TIFF allows image compression, and the format is comfortable for moving large files between computers.

DIB (Device Independent Bitmap) :

This format which is similar to BMP, allows the files to be displayed on a variety of devices.

GIF (Graphics Interchange Format) :

- (i) GIF is a compressed image format. Most of the computer color images and backgrounds are GIF files.
- (ii) This file format is best suitable for graphics that uses only limited colors, and it is the most popular format used for online color photos.

TGA (Tagra) :

It is the first popular format for high-resolution images. TGA is supported by Most of the video-capture boards.

PNG (Portable Network Graphics) :

- (i) An extensible file format for the less loss, portable and well compressed storage of raster images.
- (ii) PNG acts as replacement for GIF and also replaces multiple common uses of TIFF.

(3) Digital Audio File Formats :

WAV (Waveform Audio File Format)

- (i) WAV is the most popular audio file format in windows for storing uncompressed sound files.
- (ii) In order to attain the reduced file size it can also be converted to other file formats like MP3.

MP3 (MPEG Layer-3 Format) :

- (i) MPEG Layer-3 format is the most popular format for storing and downloading music.
- (ii) The MP3 files are roughly compressed to one-tenth the size of an equivalent WAV file.

(4) Digital Video File Formats :

AVI (Audio/Video Interleave) :

AVI is the video file format for Windows. Here sound and picture elements are stored in alternate interleaved chunks in the file.

MPEG (Moving Picture Experts Group) :

- (i) MPEG is a standard for generating digital video and audio compression under the International Standards Organization (ISO) by the group of people.
- (ii) Simply MPEG is the standards for digital video and audio compression.

GOVERNMENT EXAM QUESTIONS AND ANSWERS

CHOOSE THE CORRECT ANSWER 1 MARK

- 1. In which of the following pair / pairs is/wrong [QY-2019]**
- 1) DIB ----- Allows the files to be displayed on a variety of devices
 - 2) RA ----- It is designed for streaming audio over the internet
 - 3) RTF ----- Introduced by APPLE
 - 4) TGA ----- It is supported by most of the video capture boards
- (a) both 1 and 2
 (b) both 2 and 3
 (c) 3 only
 (d) 4 only
- [Ans. (c) 3 only]**

- 2. Which is not an image format? [Sep-2020]**
- | | |
|----------|----------|
| (a) AIFF | (b) GIF |
| (c) TIFF | (d) JPEG |
- [Ans. (a) AIFF]**

VERY SHORT ANSWERS 2 MARKS

- 1. Write roles and responsibilities of computer programmer. [QY-2019]**
- Ans. (i)** The computer programmer writes the lines of code or scripts in the appropriate language.
- (ii)** These scripts usually develops special functions like developing the software to give the size and shape of video windows, controlling peripherals and so on.



CHAPTER

2

AN INTRODUCTION TO
ADOBE PAGEMAKER

EVALUATION

PART - I

CHOOSE THE CORRECT ANSWER



2. _____ is a DTP software.
(a) Lotus 1-2-3 (b) PageMaker
(c) Maya (d) Flash
[Ans. (b) Pagemaker]
6. A _____ tool is used for magnifying the particular portion of the area.
(a) Text tool (b) Line tool
(c) Zoom tool (d) Hand tool
[Ans. (c) Zoom tool]
7. _____ tool is used for drawing boxes.
(a) Line (b) Ellipse
(c) Rectangle (d) Text
[Ans. (c) Rectangle]
8. Place option is present in _____ menu.
(a) File (b) Edit
(c) Layout (d) Window
[Ans. (a) File]
10. Character formatting consists of which of the following text properties?
(a) Bold (b) Italic
(c) Underline (d) All of these
[Ans. (d) All of these]
12. Shortcut to print a document in Pagemaker is _____
(a) Ctrl + A (b) Ctrl + P
(c) Ctrl + C (d) Ctrl + V
[Ans. (b) Ctrl + P]

13. Adobe PageMaker is a _____ software.
[Ans. Page layout]
16. _____ tool is used to draw a circle.
[Ans. Ellipse]
17. The Insert pages option is available on clicking the _____ menu.
[Ans. Layout]

PART - II

SHORT ANSWERS

7. Differentiate Ellipse tool from Ellipse frame tool.

Ellipse tool		+	Used to draw circles and ellipses.
Ellipse frame tool		+	Used to create elliptical placeholders for text and graphics.

9. What is text block?
Ans. A text block contains text you type, paste, or import. The borders of a text block cannot be seen until it select with the pointer tool.
10. What is threading text blocks?
[Govt. MQP-2019]
Ans. A Text block can be connected to other text block so that the text in one text block can flow into another text block. Text blocks that are connected in this way are **threaded**.
11. What is threading text?
Ans. The process of connecting text among Text blocks is called **threading text**.



12. How do you insert a page in PageMaker?

Ans. To insert pages

- (i) Go to the page immediately before the page to be inserted.
- (ii) Choose **Layout** → **Insert Pages** in the menu bar. The **Insert Pages** dialog box appears.
- (iii) Type the number of pages want to be insert.
- (iv) To insert pages after the current page, choose 'after' from the pop-up menu.
- (v) Click on Insert.
- (vi) The new pages are inserted in publication.

PART - III

EXPLAIN IN BRIEF ANSWER

1. What is PageMaker? Explain its uses.

- Ans.**
- (i) Adobe PageMaker is a page layout software.
 - (ii) It is used to design and produce documents that can be printed.
 - (iii) A simple business card to a large book can be created.
 - (iv) Page layout software includes tools that allows to easily position text and graphics on document pages. For example, using PageMaker, create a newsletter that includes articles and pictures on each page.
 - (v) Pictures and text next to each other, on top of each other, or beside each other can be placed.

4. How do you rejoin split blocks?

Ans. To rejoin the two text blocks

- (i) Place the cursor on the bottom handle of the second text block, click and drag the bottom handle up to the top.
- (ii) Then place the cursor on the bottom handle of the first text block, and click and drag the bottom handle down if necessary.

5. How do you link frames containing text?

Ans. To link Frames containing text

- (i) Draw a **second frame** with the Frame tool of your choice.
- (ii) Click the **first frame** to select it.
- (iii) Click on the **red triangle** to load the text icon.
- (iv) Click the **second frame**. PageMaker flows the text into the second frame.

6. What is the use of Master Page?

[QY-2019; Mar-2020]

- Ans. (i)** Any text or object that you place on the master page will appear on the entire document pages to which the master is applied.

- (ii) It shortens the amount of time because you don't have to create the same objects repeatedly on subsequent pages.
- (iii) Master pages commonly contain repeating logos, page numbers, headers and footers.

7. How to you insert page numbers in Master pages?

- Ans.**
- (i) Click on Master Pages icon.
 - (ii) Then click on Text Tool. Now the cursor changes to I - beam.
 - (iii) Then Click on the left Master page where you want to put the page number.
 - (iv) Press Ctrl + Alt + P.
 - (v) The page number displays as 'LM' on the left master page.
 - (vi) Similarly click on the right Master page where you want to put the page number.
 - (vii) Press Ctrl + Alt + P.
 - (viii) The page number displays as 'RM' on the right master page, but will appear correctly on the actual pages.

PART - IV

EXPLAIN IN DETAIL

2. Write the steps to place the text in a frame.

Ans. To place text in a Frame

- (i) Click on one of a Frame tool from the Toolbox.
- (ii) Draw a frame with one of PageMaker's Frame tools (Rectangle frame tool or Ellipse Frame Tool or Polygon frame Tool). Make sure the object remains selected.
- (iii) Click on **File**. The File menu will appear.
- (iv) Click on **Place**. The Place dialog box will appear.
- (v) Locate the document that contains the text you want to place, select it.
- (vi) Click on **Open**.
- (vii) Click in the frame to place the text in it. The text will be placed in the frame.

3. How can you convert text in a text block to a frame? [QY-2019]

Ans. Converting text in a text block to a frame:

After creating a text in the text block, to convert it to a frame. It can be done by using these steps.

- (i) Draw the **frame** of your choice using one of the PageMaker's Frame tool.
- (ii) Select the text block you want to insert in the frame.



- (iii) Click the frame while pressing the Shift key. Now both elements will be selected.
- (iv) Choose **Element** → **Frame** → **Attach Content** on the Menu bar.
- (v) Now the text appears in the frame.

4. Write the steps to draw a star using polygon tool? [Sep-2020]

Ans. Drawing a star using polygon tool:
To draw a Star

- (i) Click on the **Polygon tool** from the toolbox. The cursor changes to a **crosshair**.

- (ii) Click and drag anywhere on the screen. As you drag, a Polygon appears.
- (iii) Release the mouse button when the Polygon is of the desired size.
- (iv) Choose **Element** → **Polygon Settings** in the menu bar. Now Polygon Settings dialogue box appears.
- (v) Type 5 in the Number of sides text box.
- (vi) Type 50% in Star inset textbox.
- (vii) Click OK. Now the required star appears on the screen.

GOVERNMENT EXAM QUESTIONS AND ANSWERS

CHOOSE THE CORRECT ANSWER **1 MARK**

1. A _____ dialogue box appears when double click the line tool from the page maker tool box. [QY-2019]

- (a) Rounded Corners
 - (b) Custom stroke
 - (c) Polygon Settings
 - (d) Go to page
- [Ans. (b) Custom stroke]

2. Shortcut to fetch a pointer Tool in PageMaker: [Sep-2020]

- (a) F2
 - (b) F5
 - (c) F7
 - (d) F9
- [Ans. (d) F9]

3. _____ Command is used to show the ruler in PageMaker. [Sep-2020]

- (a) View → Ruler
 - (b) Show → Ruler
 - (c) View → Show Rulers
 - (d) None
- [Ans. (d) View → Ruler]

VERY SHORT ANSWERS **2 MARKS**

1. How will you delete text in PageMaker file? [Mar-2020]

Ans. To delete a character, do the following :

- (i) Position the insertion point to the **left of the character** to be deleted.
- (ii) Press **Delete key** on the keyboard.

2. How to resize a Text Block in PageMaker? [Sep 2020]

Ans. When a text block is selected with the Pointer tool, the block's boundaries become visible. Two

handles are seen above and below the text block. These handles are called **Windowshades**. There is a dark square on both ends of the handle. These are used to change the size of the text block.

EXPLAIN IN BRIEF ANSWER **3 MARKS**


1. How will you magnify a page in pagemaker? [Govt. MQP-2019]

Ans. To magnify or reduce with the zoom tool :

- (i) Select the zoom tool. The pointer becomes a magnifying glass with a plus sign in its center, indicating that the zoom tool will magnify your view of the image. (The magnifying glass shows a minus sign in its center when in reduction mode.) To toggle between magnification and reduction, press the Ctrl key.
- (ii) Position the magnifying glass at the center of the area you want to magnify or reduce, and then click to zoom in or out. Continue clicking until the publication is at the magnification level you want. When the publication has reached its maximum magnification or reduction level, the center of the magnifying glass appears blank.

2. How to save PageMaker Archives? [HY-2019]

Ans. Saving a document allows you to review later and edit the document. Saved file can be used on other computer also. To save a document for a first time following steps are used:

- (a) Choose **File > Save** in the menu bar. (or) Click on the Save icon() in the Tool bar.



INTRODUCTION TO DATABASE MANAGEMENT SYSTEM

EVALUATION

PART - I

CHOOSE THE CORRECT ANSWER

2. The _____ diagram gives a logical structure of the database graphically. [Govt. MQP-2019]
(a) Entity-Relationship (b) Entity
(c) Architectural Representation
(d) Database [Ans. (a) Entity-Relationship]
3. An entity set that does not have enough attributes to form primary key is known as
(a) Strong entity set (b) Weak entity set
(c) Identity set (d) Owner set
[Ans. (b) Weak entity set]
5. MySQL belongs to which category of DBMS?
(a) Object Oriented (b) Hierarchical
(c) Relational (d) Network
[Ans. (c) Relational]
6. MySQL is freely available and is open source.
(a) True (b) False
[Ans. (a) True]
7. _____ represents a "tuple" in a relational database?
(a) Table (b) Row
(c) Column (d) Object
[Ans. (b) Row]
8. Communication is established with MySQL using
(a) SQL (b) Network calls
(c) Java (c) API's
[Ans. (a) SQL]

9. Which is the MySQL instance responsible for data processing?
(a) MySQL Client
(b) MySQL Server
(c) SQL
(d) Server Daemon Program
[Ans. (b) MySQL Server]
10. The structure representing the organizational view of entire database is known as _____ in MySQL database.
(a) Schema (b) View
(c) Instance (d) Table
[Ans. (a) Schema]

PART - II

SHORT ANSWERS

2. List few disadvantages of file processing system.
- Ans. (i) **Data Duplication** : Same data is used by multiple resources for processing, thus created multiple copies of same data wasting the spaces.
(ii) **High Maintenance** : Access control and verifying data consistency needs high maintenance cost.
(iii) **Security** : Less security provided to the data.
3. Define Single and multi valued attributes.
- Ans. **Single valued attributes**:
A single valued attribute contains only one value for the attribute and they don't have multiple numbers of values.

Single Valued Attributes	
Attributes	Values
Age	3
Roll no	85

Multi valued attributes:

A multi values attribute has more than one value for that particular attribute.

Attributes and Values	
Attributes	Values
Degree	B.Tech, MBA
Bank_Account	SBI, HDFC

5. What are the ACID properties?

Ans. ACID Properties : [Govt. MQP-2019]

- (i) The acronym stands for Atomicity, Consistency, Isolation and Durability.
- (ii) Atomicity follows the thumb rule “All or Nothing”, while updating the data in database for the user performing the update operation.
- (iii) Consistency ensures that the changes in data value to be constant at any given instance. Isolation property is needed during concurrent transaction.
- (iv) Durability is defined as the system’s ability to recover all committed transactions during the failure of storage or the system.

9. What is Relationship and List its types.

Ans. There exists a relationship between two tables when the foreign key of one table references primary key of other table.

Types :

- (i) One – to – One relationship
- (ii) One – to – Many relationship
- (iii) Many – to – Many relationship

10. State few advantages of Relational databases.

Ans. Advantages :

- (i) High Availability
- (iii) High Performance
- (iv) Robust Transactions and Support
- (v) Ease of Management
- (vi) Less Cost

EXPLAIN IN BRIEF ANSWER

1. Explain on Evolution of DBMS.

Ans. Evolution of DBMS:

- (i) The concept of storing the data started before 40 years in various formats.
- (ii) In earlier days they have used punched card technology to store the data. Then files were used.
- (iii) The file systems were known as predecessor of database system.
- (iv) Various access methods in file system were indexed, random and sequential access. The file system had more limitations like **Data Duplication** : Same data is used by multiple resources for processing, thus created multiple copies of same data wasting the spaces.
High Maintenance : Access control and verifying data consistency needs high maintenance cost.
Security : Less security provided to the data.
- (v) So database systems became popular to overcome the above limitations of file system.

2. What is relationship in databases? List its types.

Ans. In ER Model, relationship exists between two entities. Three types of relationships are available and the Entity-Relationship(ER) diagram is based on the three types listed below.

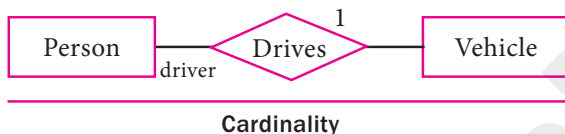
- (i) **One-to-One relationship:** One-to-one (1:1) relationship is said to exist in a relational database design, if 0 or 1 instance of entity A is associated with 0 or 1 instance of entity B, and 0 or 1 instance of entity B is associated with 0 or 1 instance of entity A.
- (ii) **One-to-Many relationship:** One-to-many (1:N) relationship is said to exist in a relational database design, for 1 instance

of entity A there exists 0 or 1 or many instances of entity B, but for 1 instance of entity B there exists 0 or 1 instance of entity A.

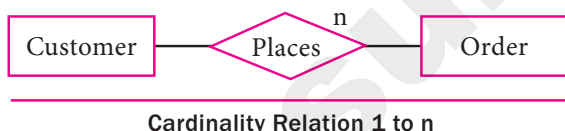
(iii) **Many-to-Many relationship:** Consider two entities A and B. many-to-many (M:N) relationship is said to exist in a relational database design, for 1 instance of entity A there exists 0 or 1 or many instances of entity B, and for 1 instance of entity B there exists 0 or 1 or many instance of entity A.

3. Discuss on Cardinality in DBMS.

Ans. Cardinality is defined as the number of items that must be included in a relationship (i.e) number of entities in one set mapped with the number of entities of another set via the relationship. Three classifications in Cardinality are one-to-one, one-to-many and Many-to-Many.



If we consider the current vehicle, the driver is operating, then we have one-to-one relationship between Person and Vehicle.



In the above example, Customer places the Order is a one-to-many relationship. Here the customer can place multiple orders and the order is related to only one customer.



The example of many-to-many relationship is Students registering the Courses. A student can register more than one courses and A course can be registered by many students. Hence it is many-to-many.

EXPLAIN IN DETAIL

2. List the basic concepts of ER Model with suitable example.

Ans. ER Modeling basic concepts: The basic concepts of ER model consists of

1. Entity or Entity type
2. Attributes
3. Relationship

These are the general concepts which help to create an ER diagram and produce an ER model. With the help of these any database design can be created and viewed to know the concept in that database design.

1. Entity or Entity type :

- (i) An Entity can be anything a real-world object or animation which is easily identifiable by anyone even by a common man.
- (ii) **Eg:** In a company's database Employee, HR, Manager are considered as entities, where each of these entity will be having their own attributes. An entity is represented by a rectangular box.

Employee	Manager
-----------------	----------------

Types of Entity :

- (a) Strong Entity
- (b) Weak Entity
- (c) Entity Instance

2. Attributes:

An attribute is the information about that entity and it will describe, quantify, qualify, classify, and specify an entity. An attribute will always have a single value, that value can be a number or character or string.

Types of attributes :

- (i) Key Attribute
- (ii) Simple Attributes
- (iii) Composite Attributes
- (iv) Single Valued Attribute
- (v) Multi Valued Attribute

3. Relationship Type:

In ER Model, relationship exists between two entities. Three types of relationships are available



and the Entity- Relationship(ER) diagram is based on the three types listed below.

- (i) **One-to-One relationship:** Consider two entities A and B. one-to-one (1:1) relationship is said to exist in a relational database design, if 0 or 1 instance of entity A is associated with 0 or 1 instance of entity B, and 0 or 1 instance of entity B is associated with 0 or 1 instance of entity A.
- (ii) **One-to-Many relationship:** Consider two entities A and B. one-to-many (1:N) relationship is said to exist in a relational database design, for 1 instance of entity A there exists 0 or 1 or many instances of entity B, but for 1 instance of entity B there exists 0 or 1 instance of entity A.
- (iii) **Many-to-Many relationship:** Consider two entities A and B. many-to-many (M:N) relationship is said to exist in a relational database design, for 1 instance of entity A there exists 0 or 1 or many instances of entity B, and for 1 instance of entity B there exists 0 or 1 or many instance of entity A.

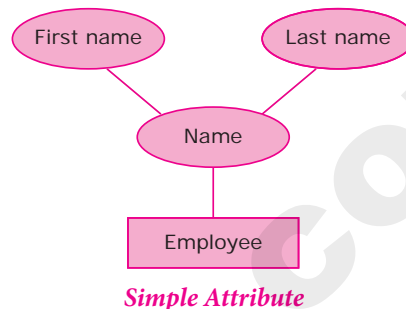
In reality one-to-one are in less usage, where as one-to-many and many-to-many are commonly used. However in relational databases, many-to-many are converted into one-to-many relationships.

3. Discuss in detail on various types of attributes in DBMS. [QY-2019]

Ans. Types of attributes :

1. Key Attribute
 2. Simple Attributes
 3. Composite Attributes
 4. Single Valued Attribute
 5. Multi Valued Attribute
1. **Key Attribute :** Generally a key attribute describes a unique characteristic of an entity.
 2. **Simple Attribute :**
 - (i) The simple attributes cannot be separated it will be having a single value for their entity.

- (ii) **Ex:** Let us consider the name as the attribute for the entity employee and here the value for that attribute is a single value.

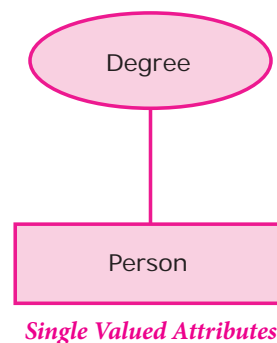


3. **Composite Attributes :**
 - (i) The composite attributes can be subdivided into simple attributes without change in the meaning of that attribute.
 - (ii) **Ex:** In the above diagram the employee is the entity with the composite attribute Name which are sub-divided into two simple attributes first and last name.

4. **Single Valued Attributes :**
 - (i) A single valued attribute contains only one value for the attribute and they don't have multiple numbers of values.
 - (ii) **Ex:** Age- It is a single value for a person as we cannot give n number of ages for a single person, therefore it is a single valued attribute.

Single Valued Attributes	
Attribute	Values
Age	3
Roll no	85

In the above table are the some examples for single valued attributes.





5. Multi Valued Attributes :

- (i) A multi valued attribute has more than one value for that particular attribute.
- (ii) **Ex:** Degree - A person can hold n number of degrees so it is a multi-valued attribute.

Attributes and Values	
Attribute	Values
Degree	B.Tech, MBA
Bank_Account	SBI, HDFC

GOVERNMENT EXAM QUESTIONS AND ANSWERS

CHOOSE THE CORRECT ANSWER

1 MARK

- 1. A key with more than one attribute to identify rows originally in a table is called [QY-2019]
 - (a) Candidate key
 - (b) Foreign key
 - (c) Primary key
 - (d) Composite key [Ans. (d) Composite key]
- 4. The horizontal entity in a table is known as [Mar-2020]
 - (a) Key
 - (b) Record
 - (c) Table
 - (d) Column [Ans. (b) Record]
- 6. _____ uniquely identifies the row in Database table. [Sep-2020]
 - (a) Foreign key
 - (b) Super key
 - (c) Primary key
 - (d) Composite key [Ans. (c) Primary key]

VERY SHORT ANSWERS

2 MARKS

- 1. What is primary key? [Mar-2020]

Ans. This key of relational table identifies each record in the table in a unique way.

