

Answer Key

IT 402 (Ver. 1.0)

Part-A: Employability Skills

1. Communication Skills-I

Find on Google Pg. 19

Communication helps us share ideas, build relationships, and solve problems effectively.

Find on Google Pg. 32

A direct object directly receives the action of the verb and answers "What?" or "Whom?". An indirect object receives the direct object and answers "To whom?" or "For whom?" the action is done.



- 1. A sentence is a group of words arranged together and has a complete meaning.
- 2. The two most basic parts of a sentence are subject and a predicate.
- 3. Following are the rules for writing a sentence:
 - · It begins with a capital letter.
 - It ends with a full stop, exclamation mark, or question mark depending on the type of a sentence.
 - It must contain one subject and one verb with an independent clause.
 - It should have a meaning.
- 4. Comma is used to mark a pause in a sentence.



SECTION A (Objective Type Questions)

- A. 1. b.
- 2. a.
- 3. a.
- 4. c.
- 5. d.

- B. 1. True
- 2. True
- 3. False
- 4. True
- 5. False



- C. 1. Interrogative 2. Assertive 3. Interrogative 4. Assertive 5. Assertive
 - 6. Exclamatory 7. Imperative 8. Imperative 9. Imperative 10. Assertive
- D. 1. **She** (pronoun) **went** (verb) **to** (preposition) the **market** (noun) to **buy** (verb) **fruits** (noun).
 - 2. **I** (pronoun) **am** (verb) **scared** (adjective) **of** (preposition) **thunder** (noun) and **lightning** (noun).
 - 3. Ankit (noun), what's your (pronoun) opinion (noun) about (preposition) this (pronoun)?
 - 4. Teacher (noun) Sunita (noun) teaches (verb) Physics (noun) and Mathematics (noun).
 - 5. **Priya** (noun) and **her** (pronoun) **friends** (noun) **are going** (verb) **on** (preposition) a **picnic** (noun).
- E. 1. an 2. The 3. a 4. an, the 5. The

6. a

F. 1. Active: She sings a beautiful song.

Passive: A beautiful song is sung by her.

2. Active: The teacher explains the lesson.

Passive: The lesson is explained by the teacher.

3. Active: John reads a book every night.

Passive: A book is read by John every night.

4. Active: They built a new house.

Passive: A new house was built by them.

5. Active: The dog chased the cat.

Passive: The cat was chased by the dog.

6. Active: The chef cooks delicious meals.

Passive: Delicious meals are cooked by the chef.

7. Active: The dog barked at the stranger.

Passive: The stranger was barked at by the dog.

8. Active: I finished my homework.

Passive: My homework was finished by me.

9. Active: He repaired the broken chair.

Passive: The broken chair was repaired by him.

10. Active: We planted a tree in the garden.

Passive: A tree was planted in the garden by us.

SECTION B (Subjective Type Questions)

A. 1. Encoding in communication is the process of converting thoughts or ideas into symbols, words, or gestures for transmission.



- 2. If the surrounding area of the communication is imbalanced, then, the impact of the communication will not be much. Fear, anxiety, aggression, etc. strongly affect the communication skills.
- 3. The content of the message should stick to the topic and should flow in a sequence that makes sense.
- 4. Oral communication is communication using spoken words in an interactive way to share ideas or information. It can be a direct face-to-face conversation or a telephonic conversation.
- 5. Interrogative Sentences
- B. 1. Interjection: An interjection is a word or a phrase that expresses a sudden or a strong feeling. Grammatically they are not related in a sentence but expresses a relationship between a word and a phrase in a sentence. Sometimes they are followed by an exclamation mark(!).

For example:

- Alas! I am so lost without you.
- Great! You are coming with me.

Conjunction: Conjunction is a word that joins words, phrases, clauses, or sentences together. There are different types of conjunctions. Some conjunctions may be used to make a list while some may be used to connect thoughts, ideas or actions. For example:

- I bought a pen, pencil, and ruler for my exams.
- Neither this bridge nor that road is good to travel by car.
- 2. Facial Expressions: Facial expressions are a very powerful way of conveying different forms of feelings and emotions. For effective non-verbal communication, you should smile when you meet someone, match your expressions with your words, and nod while listening. Being aware of your own facial expressions is very important in a professional environment. In one of the studies, it was found that the most trustworthy facial expression involved a slight rise of the eyebrows and a slight smile. Six basic facial expressions are—anger, fear, happy, disgust, sad, and surprise.

Appearance: Appearance includes our choice of colour, body cleanliness, properly dressed, hairstyle, etc. When you are speaking in public, you may be representing your organisation or just yourself. You should ensure that you are properly and neatly dressed. It also increases your self-confidence and you will definitely feel good about yourself.

3. The 3P's of public speaking are Prepare, Practice and Perform.

Prepare: Prepare the content of your speech. Think about what your audience is expecting you to speak and then plan your content. Make it interesting in such a way that your audience feel engaged and are full of praises for you.

Practice: Rehearse out loud your speech before your D-day. Work to control your voice modulation, make a list of few filler words and plan your body movements and hand gestures. Practice, pause, and breathe. Use a clock to check your timings and allow time for the unexpected.



- 4. An adjective is a word that defines a noun or a pronoun. For example:
 - · I have a beautiful dress.
 - My smart dog runs on a smooth road.
- 5. Apostrophe can be used to indicate the omission of some letters in a word. For example:
 - I'm enjoying my friend's company.
 - It's very hot outside.
 - It is used to show the possession of a thing.

For example:

- Adrissa's eyes are blue in colour.
- 6. IT as part of the education system

Information Technology has transformed education by making learning more accessible and interactive. With online classes, digital resources, and educational tools, students can learn at their own pace, and teachers can personalise lessons. IT breaks down geographical barriers, fostering a dynamic and collaborative learning environment.

OR

Gratitude

Gratitude is a powerful emotion that shifts our focus from what is lacking to what we have. It strengthens relationships, boosts emotional well-being, and promotes resilience. Practising gratitude helps us appreciate the good in our lives, even during challenging times.

C. 1. Sanchit has to write a paragraph on the topic 'Conservation of Water' for his assignment. He does not remember the assessment criteria for paragraphs. Help him outline the grading criteria of a paragraph.

Grading Criteria for a Paragraph:

- Clarity & Relevance: The paragraph should clearly convey the main idea and stay on topic.
- Structure: It should have a proper introduction, body, and conclusion.
- Grammar & Spelling: Correct grammar, punctuation, and spelling should be used.
- Coherence & Flow: Ideas should be logically connected with appropriate transitions.
- Content & Accuracy: The information should be relevant, accurate, and well-supported with facts or examples.
- Correct Sentence: I bought a smartphone.

Rules for Using Articles:

- 'A' is used before words that begin with a consonant sound (e.g., a book, a university).
- 'An' is used before words that begin with a vowel sound (e.g., an apple, an hour).
- 'The' is used for specific nouns (e.g., the sun, the Eiffel Tower).
- The choice of article depends on pronunciation, not just spelling. "Smartphone" starts with a consonant sound (/s/), so "a" is correct.





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2. Self-Management Skills-I

Find on Google Pg. 55

Self-confidence is important because it helps individuals believe in their abilities and face challenges with a positive mindset.



- 1. successful
- 2. positive
- 3. preparation



- 1. Various
- 2. Environmental
- 3. confidence



SECTION A (Objective Type Questions)

- A. 1. a.
- 2. d.
- 3. a.
- 4. b.
- 5. b.

- B. 1. Social
- 2. Problem-solving

3. self-esteem

- 4. attire
- 5. Relaxed mind

SECTION B (Subjective Type Questions)

A. 1. It is the ability to manage your impulse, emotions and behaviour. Know yourself so you can manage your emotions and impulses. It acts as a force to have a more successful and satisfying life. For example, the Indian system of fasting is an excellent example of self-control. Fasting restricts a person from eating specific food.



- 2. It is the ability to plan and organise a given task in an effective manner. Good organisational abilities will prevent difficulty in your work and disorder in your daily life. For example, A student needs to have necessary material for the assigned activity, stay in their seat, and finish required work before going to the next assignment.
- 3. Low self-confidence can lead to hesitation, missed opportunities, and vulnerability to external influences, often resulting in undesirable situations.
- 4. Apart from academics, the only source of knowledge is experience.
- 5. Positive Affirmations for Success:
 - I am capable of achieving my goals with dedication and persistence.
 - Every challenge I face is an opportunity to grow stronger.
 - I trust my skills and creativity to make a meaningful impact.
 - Distractions and doubts do not define me—I stay focused and resilient.
 - I am building a future where innovation, leadership, and purpose align.
 - My efforts today shape the success I will achieve tomorrow.
- B. 1. It helps in the overall development of a person.
 - It polishes your skills and enhances your employability with better career prospects.
 - It makes you realise your potential and maximises your productivity that helps you grow personally and professionally.
 - It brings strong organisational skills that help you streamline your work.
 - 2. Following are the steps to identify your strengths:
 - Identify your strengths by talking to a few people close to you. Listen to them honestly what they have to say good about you. Ask them:
 - What do you think I am good at?
 - What are my strengths?
 - How can I use my strengths to choose my career?
 - Which task can I do for hours without getting tired?
 - List down the good things conveyed to you by these people, sit alone, and introspect.
 - If you want to be doubly sure, then, you can also take a personality test by going to a professional.
 - Feel your strength with these good points and what others have appreciated in you.
 - Use your strength in choosing the correct path for your overall development.
 - Being aware of the purpose in life is very important to make your own existence feel.
 Knowing yourself helps you understand your own identity. It is important to know yourself in order to achieve success in life. It gives you purpose, direction and a true sense of well-being.

In this process of knowing yourself, it is important to know our:

- Body and physical challenges
- Personality in private and public moments



- Morale and principles
- Strengths and weaknesses
- · Temptations and frustrations
- · Likes and dislikes
- · Beliefs and opinions
- · Background and relationships
- Positive and negative emotions
- Tolerance and understanding of others
- Creativity and interests
- Limits and boundaries
- 4. People with low self-confidence often doubt their abilities, fear failure, and seek constant validation. They may hesitate to take risks, avoid challenges, and struggle with self-expression.

In contrast, individuals with high self-confidence trust their skills, embrace challenges, and learn from failures. They take initiative, maintain a positive outlook, and handle criticism constructively. Their self-assurance helps them stay resilient and focused on their goals, leading to greater success and personal growth.

5. CARE

- · Keep your hair free of dandruff
- Rub oil/cream to take care of your skin
- · Brush your teeth daily
- Change your toothbrush after a period of time.
- Cut your nails every week

WASH

- Wash your hands frequently
- Take bath every day
- Wash your clothes regularly
- Wash your hair at least every second day
- Wash your feet often

AVOID

- Blow your nose/cough into a handkerchief to avoid spreading germs
- Keep your feet dry and change your socks every day
- C. 1. Organisational Skills
 - 2. Self-Control
 - 3. Self-Motivation
 - 4. Self-Commitment
 - 5. Self-Confidence



- D. 1. Ankit, try using a daily planner or to-do list to organize your tasks. Setting clear goals, breaking them into smaller steps, and following a schedule will help you stay on track. Also, set deadlines for yourself—it builds self-discipline and ensures timely work.
 - 2. I judge myself based on my own views, not others' expectations. Everyone has different strengths and goals, so comparing with others is not helpful. I focus on improving myself, setting my own standards, and growing at my own pace.







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3. ICT Skills-I

Find on Google Pg. 89

Interface Manager



- SMTP (Simple Mail Transfer Protocol): SMTP is a protocol used for sending and receiving email. It handles the transmission of emails between servers and is responsible for the reliable and efficient delivery of emails over the Internet.
 - FTP (File Transfer Protocol): FTP is a standard network protocol used for transferring files between a client and a server on a computer network. It provides a simple way to upload and download files from one computer to another over the Internet.
- 2. A web browser (commonly referred to as a browser) is a software application for using and sharing information on the World Wide Web.
- 3. A web client (like a browser) sends requests to a web server to access web pages, while a web server processes these requests and delivers the requested content. The client initiates communication, and the server responds with data.
- 4. Online learning: There are a number of courses available online-some are free while others are not. You can do a course on a topic you like or want to know more about.
 - Social networking: You can share your interests, knowledge and stories with your family and friends around the world. For example, Facebook and Twitter



SECTION A (Objective Type Questions)

A. 1. a.

2. c.

3. d.

4. b.

5. c.

6. b.

B. 1. ICT

2. E-Banking

3. Communication Channels

4. YouTube

5. Protocols

6. Homepage

7. URL (Uniform Resource Locator)

8. BCC (Blind Carbon Copy)

C. 1. True

2. False

3. True

4. False

5. False

6. True

7. True

8. True

D. • Plotter - Output Device

• Microphone - Input Device

• Flash Drive - Storage Device

Speaker – Output Device

Scanner- Input Device

Printer – Output Device

Hard Disk – Storage Device

• Bar Code Reader – Input Device

Light Pen – Input Device

Projector – Output Device

E. 1. SMTP (Simple Mail Transfer Protocol)

2. TCP/IP (Transmission Control Protocol / Internet Protocol)

3. FTP (File Transfer Protocol)

4. HTTPS (Hypertext Transfer Protocol Secure)

SECTION B (Subjective Type Questions)

- A. 1. Blu-ray disc is of the same dimension as that of CD or DVD and uses the same optical rays technology for recording and playing back high-definition (HD) video and for storing large amounts of data. It has a capacity of up to 25 GB.
 - 2. Mobile Operating Systems are designed to run the applications and other programs on smartphones, tablets, smart watches or other portable devices. It is a combination of an operating system and communication technology.
 - 3. A light pen is a pointing device shaped like a pen and is connected to a VDU. The tip of the light pen contains a light-sensitive element which, when placed against the screen, detects the light from the screen enabling the computer to identify the location of the pen on the screen. We generally use it to make a selection or draw anything on a screen.



- 4. A laser printer works just like a photocopy machine that prints the output at high-speed and good quality. It creates images using a laser beam and powdered ink called toner. It is more expensive than inkjet printers and can be used for home or business purposes.
- 5. Motherboard consists, Ports, Memory slots, ROM-BIOS chip, System Clock, Power connector, etc.
- 6. a. ALU: Arithmetic Logic Unit
 - b. CU: Control Unit
 - c. CPU: Central Processing Unit
- 7. CU stands for Control Unit. It controls the flow of information in the system. The control unit is responsible for the flow of data from input devices to the processing unit and then to the output devices. It works like a traffic policeman who controls the traffic on the road.
- 8. In postal mail, if you have to send the same letter to multiple recipients, then it is an expensive process. Through email we can send the same mail to multiple recipients by just writing the email address in cc or bcc with no added cost.
 - In postal mail, the recipient can receive mail only at the marked geographical location
 using street number, locality, city, pincode, etc. In email, it is a logical address that can
 be accessed from any computer and at any location all over the world.
- 9. Protocols are a set of rules and standards that define how data is exchanged and transmitted over a network.
 - SMTP (Simple Mail Transfer Protocol); FTP (File Transfer Protocol)
- 10. File is defined as a program that stores the data organised in a specific format. A folder is a directory created for storing the related files or subfolders under a specific name.
- 11. Shopping: Our shopping habits have changed because of the online medium. Instead of going to the market, we can receive everything at our doorstep with online shopping. It not only saves our effort of going out but also provides us with options of reasonable prices.
 - Communication: ICT helps us to communicate to our friends and relatives. There are more and more ways to talk to people without meeting them. For example through emails, video conferencing, video calls, etc.
- 12. Neetu should use a Multimedia Messaging Service (MMS) or an Instant Messaging app (like WhatsApp or Telegram) to share her recipes along with food photos with all her friends.
- 13. Raghav should use YouTube, as it is a popular video-sharing platform where he can explore various types of traveling videos for his travel portal.
- 14. a. Phone b. Calendar c. Calculator d. Camera
 - e. YouTube f. Facebook
- B. 1. ICT has a significant impact on professional life by enhancing productivity, enabling remote work, and improving communication through emails, video calls, and collaboration tools. It also supports data management, automation, and quick access to information, making work more efficient and competitive.

- 2. There are six components of ICT:
 - Data: It is an individual unit that contains raw material given as input in ICT system. This data is interpreted to generate an information/processed data. For example, student marks of all subjects entered in a system.
 - Procedures: These are methods used to pass data and information to people involved in ICT system. For example, using code designed in any specific computer language to generate a report card.
 - Information: It is the processed data or output/result generated in ICT system. For example, generating report card of marks entered as data.
 - People: People involved in giving input and generating output using the procedures. They use the generated information for the specific purpose. For example, marks entered by the teacher, report generated by staff of computer department in a school.
 - Software: These are programs and applications used in ICT system. These are available both as front end and back end tools. For example, MS Word, MS Excel, and Visual Basic.
 - Hardware: All physical components of the ICT system which we can touch and feel are
 called hardware. For example, Input Devices (Mouse and Keyboard), Output Devices
 (Monitor and Printer), Processing Device (Central Processing Unit) and Storage Devices
 (Hard Disk).
- 3. Motherboard or the main board consists of a board containing electric circuits that connects all the important components of the computer. If the CPU is the brain of the computer, then, the motherboard is the central nervous system making it the backbone or spine of a computer system. It consists of:
 - Ports to connect different input and output devices.
 - Memory slots that contain the system's main memory.
 - ROM-BIOS chip that acts as an interface between the operating system and the hardware of a computer.
 - System Clock that synchronises all the components of the motherboard.
 - Power connector that gives power supply to all the essential components on the motherboard.
- 4. All computing work revolves around three interrelated parts i.e., input, process, and output.
 - An input is accepted by the user through the input devices.
 - It is then processed by CPU and sent to the user as an output using output devices.
 - There can be a need to store the output for later use in the storage devices.
 - Sometimes the result generated acts as an input for the next stage of data flow.
 - This flow of information follows a cycle which is known as the Input-Process-Output Cycle.
- 5. Input devices and output devices are two types of computer hardware.
 - Input devices are used to send data to a computer. They help users give commands or input information. Examples include a keyboard, mouse, microphone, and scanner.



- Output devices display or produce results from the computer. They show or share
 processed data with the user. Examples include a monitor, printer, speaker, and
 projector.
- In simple terms, input devices help send data into the computer, while output devices help get data out in a useful form. Many devices, like touchscreens, can work as both.
- 6. Linux is an open source operating system having UNIX like features. It was originally created by Linus Torvalds in 1991. It is also known as the Operating System of the future. Some of its important features are:
 - It has a graphical user interface.
 - Free and open source operating system. Anyone with GNU General Public License (GPL) can run, modify and even sell the software.
 - It supports multiuser and multitasking. Several users can run multiple programs or processes simultaneously on one system.
 - It has a hierarchical file system to represent information. Different variants of Linux are available in the market like Red Hat, Ubuntu, Arch Linux etc.

The first version of Windows, launched by Microsoft in 1985 which was an extension of the Disk Operating System. The most important change is the support of Graphical User Interface where the mouse as an input device played a very important role. Following are some of its important features:

- Initial versions supported single user at a time but now new versions support both single user and multi users at a time.
- · It has multitasking features.
- It has a Graphical User Interface where the user can get its work done by a few simple mouse clicks.
- It provides easy access to the Internet. Some of the famous versions are, Windows 3.0, Windows 95, Windows NT, Windows 2000, Windows 7, Windows 8.1, Windows 10 and the latest in the market is Windows 11.
- 7. Unix is one of the oldest, reliable, and powerful Operating Systems developed at AT&T's Bell Laboratories in the early 1970's. It has a simple user interface called Shell, which interacts with the kernel to execute tasks. Some of its important features are:
 - It has a character user interface.
 - It supports multiuser and multitasking. Several users can run multiple programs or processes simultaneously on one system.
 - It has machine independent architecture written in high level language.
 - · It has a hierarchical file system to represent information.
- 8. The steps to shut down a computer are: Step 1 Click on Start button. The Start menu appears. Step 2 Select the Power button in the bottom-right corner. Step 3 Select Shut down option. OR Step 1 On the desktop, press Alt + F4 keys. It will display the Shut Down Windows screen. Step 2 Select the Shut down option.



- 9. A file is a collection of data or information stored on a computer, such as documents, images, or videos. It has a specific format and can be opened, edited, or shared. A folder is a virtual container used to organize and store multiple files and other folders, making data management easier. Folders help in grouping related files together for better organization.
- 10. Step 1: Connect your computer to the Internet and type www.gmail.com in the address bar browser window.
 - Step 2: Click on Create account option.
 - Step 3: A window will open which will ask for the new username and password. It is always advisable to choose a strong password so that it is difficult for others to have access to your account. At the time of assigning a username, you may get a message "this user already exists" as there are so many users. This is to take care that only unique email ids are created. So, keep trying different combinations to create a unique username. After this is done, click on "Next" button.
 - Step 4: A window will be displayed which will ask for some additional data like date of birth, alternate email address, email recovery questions etc. After you specify these details, click on "Next" button.
 - Step 5: When you click on the Next button, Google will send a verification code on your mobile number that you have entered in the previous steps. The next screens ask to enter the verification code. After entering the code, when you click on the Verify button, a window will be displayed with details of the "Privacy Policy". Select "I agree" option and then click on "Next" button. Step 6 After this, an account is created and a homepage of the newly created Gmail account will be displayed.
- 11. It is a campaign launched by the Government of India to make our country digitally equipped. Prime Minister Narendra Modi launched the campaign on 1st July 2015. Under this scheme all the government services are now available electronically for better and faster execution of services to Indian citizens. Digital India has immensely improved the online infrastructure of our country. The country now has better Internet connectivity and progressed in the field of Information Technology.
- 12. An email address is a unique logical address of an email account in any email service provider. A user can send and receive messages using an email address. It is made up of:
 - Username: It is a unique name which is not case sensitive and spaces are not allowed.
 - @sign: It works as a separator of the username and domain name in an email address.
 - Domain name: It is the name of the email service provider. For example—gmail, yahoo, hotmail, etc. For example: orangebooks@gmail.com authors_orange@hotmail.com anjana. shalini@outlook.com myaccount@orangeeducation.in
- C. 1. Thus, the correct option is:
 - (a) (iv) > (ii) > (i) > (iii)



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CLASS ACTIVITY Pg. 119

Do it yourself.

4. Entrepreneurial Skills-I



- 1. Product business A business that is involved in the production and sale of any product. This type of business involves activities related to the manufacturing, distribution, and marketing of a product. For example, a sports shop, furniture shop.
 - Hybrid business is a mix of two or more different types of businesses. It can be in service or manufacturing or merchandising or all of these. It does business in the form of goods and services. For example, a restaurant is in manufacturing by preparing ready to eat food in the form of fine dining. At the same time, it works as a merchandiser by selling beverages with fine meals. It also provides services by serving home deliveries through online or offline orders.
- 2. Hybrid business is a mix of two or more different types of businesses. It can be in service or manufacturing or merchandising or all of these. It does business in the form of goods and services.
- 3. This kind of business provides services in the form of consulting, accounting, hospitality and many more of such types which can be delivered either physically or in a digital form through the Internet or mobile apps. These services are not in the physical form which can be touched or stored or bought from the retailers. They are provided by professionals or experts in such areas.

Find on Google Pg. 127

Some of India's fastest-growing startups, particularly in the D2C (Direct-to-Consumer) space, include Zepto, KukuFM, Pocket FM, and Uni Cards, with Zepto leading in quick commerce and KukuFM and Pocket FM excelling in media and entertainment.



SECTION A (Objective Type Questions)

- A. 1. a. 2. c. 3. a. 4. b.
- B. 1. systematic 2. merchandise 3. Green 4. quality, availability
 - 5. Marketing
- C. 1. Manufacturing 2. Hybrid 3. Entrepreneur
 - 4. Founder
- D. 1. True 2. False 3. False 4. True 5. True 6. True 7. True 8. False 9. True 10. False

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SECTION B (Subjective Type Questions)

- A. 1. A businessman is a person who starts a business based on an idea already existing in a society. For example, opening a grocery shop, mobile shop, etc.
 - 2. Feedback in the long run: It is important to take feedback from the customers in the long run. You can use the feedback to improve your product and reach out to a larger group for future expansion of the business.
 - 3. Entrepreneurship often involves facing challenges and uncertainties. Patience is essential to handle difficult times and waiting for the efforts to be paid, especially at the time of dealing with setbacks. It allows entrepreneurs to maintain a long-term perspective and make strategic decisions.
 - 4. Entrepreneurship is setting your own business in an innovative manner which may have great risks and desires to earn more profits.
 - The output of the innovative process of setting up a business is called an enterprise.
 - 5. Wage Employment: It exists as a partnership between two entities: the employer and the employee. In this type of employment, an employee receives compensation for their work in the form of wages or salary. It does not involve risks and the amount paid is fixed with certain incentives irrespective whether an employer is having loss or profit in his business.
 - 6. Feeling a large responsibility for the business may sometimes be scary and brings a lot of mental instability. Funds management, unpredictable market, employees' reactions and sometimes less time for family may lead to emotional setback for an entrepreneur.
 - 7. Market Leader who creates his own market.
 - 8. Susan can consider starting the following service businesses with minimal investment:
 - i. Social Media Management
 - ii. Event Planning
 - iii. Personalized Coaching (Sales, Marketing, or Life Coaching)
 - iv. Freelance Content Writing or Copywriting
 - v. Virtual Assistant Services
 - vi. Online Tutoring
 - vii. Cleaning or Home Organization Services
 - viii. Digital Marketing Agency (low-cost ads, SEO)

 These require skills, time, and minimal capital.
 - 9. Product Business: A business that is involved in the production and sale of any product. This type of business involves activities related to the manufacturing, distribution, and marketing of a product. For example, a sports shop, furniture shop.
 - Service-based business: This kind of business provides services in the form of consulting, accounting, hospitality and many more of such types which can be delivered either physically or in a digital form through the Internet or mobile apps. These services are not in the physical form which can be touched or stored or bought from the retailers. They are provided by professionals or experts in such areas. Salon is an example of Service business.

- 10. Organisation: This plays an important role if a startup is launched at a large scale with a big investment. Though an entrepreneur is a person leading the whole business with his ideas but the other employees working in an organisation are equally important for the success of the startup.
- B. 1. The various benefits of entrepreneurship include the following:
 - Do what you are interested in: Entrepreneurship helps the entrepreneurs to pursue their passions and interests, allowing for greater creativity and innovation in their work.
 - Work for yourself, and not for others: Entrepreneurship provides the freedom to design work hours, select projects, and work from any place. Entrepreneurs can decide the kind of work they would like to do and how they want to do it.
 - Make profits for yourself: As an entrepreneur, one can decide how much money they
 want to earn and how much they want to invest in the business. They decide on the
 salary, wages and incentives of the employees.
 - More risk, more profit: Entrepreneurship involves the risk of failure, but successful
 entrepreneurs are often courageous and ready to take risks. Taking risks can lead to
 greater financial success, as it allows entrepreneurs access to more resources.
 - 2. Manufacturing: This kind of business uses raw materials, labour, technology, capital and other resources for the production of finished goods. It follows a step-by-step approach of putting together raw materials, parts and components, moving from one workstation to the other with the help of technology, machinery, robots, computers, and labour.
 - Trading: This deals with buying and selling a product. In this, the finished products are purchased at wholesale price and sold to consumers at retail price. The form of the products is not changed but the products are sold at a little higher price than the purchase price that helps them to earn profits. They also transport the product from the factory to warehouses. Examples of these businesses include wholesalers, distributors and retail shops.
 - 3. Step 1 Plan and finalise a business idea.
 - Step 2 Plan and finalise your finances.
 - Step 3 Choose your legal business structure.
 - Step 4 Finalise the business location.
 - Step 5 Build your team.
 - Step 6 Target the prospective customers.
 - Step 7 Promote the business.
 - Step 8 Feedback in the long run.
 - 4. Entrepreneurship development is the process of enhancing knowledge and improving skills of an entrepreneur through structured training and classroom programs. Through this process, a person is equipped with the required skills and knowledge needed for starting and running the enterprise. Hence, this will be a big effort in preparing new entrepreneurs which will pave the way for a better economy and make the path for the creation of a developed society.

- 5. Entrepreneurship is setting your own business in an innovative manner which may have great risks and desires to earn more profits. Entrepreneurship, thus involves taking risks with innovation, planning and decisions so as to increase productivity in any field business, agriculture, social work, education, etc. It thus plays an important role in the process of economic development. Entrepreneurship can be at small scale, medium scale or large scale in terms of products and services.
- 6. Patience: Entrepreneurship often involves facing challenges and uncertainties. Patience is essential to handle difficult times and waiting for the efforts to be paid, especially at the time of dealing with setbacks. It allows entrepreneurs to maintain a long-term perspective and make strategic decisions.
 - Positivity: A positive mindset is essential in overcoming obstacles and setbacks. It helps entrepreneurs to stay focused on solutions rather than problems even when he/she takes a big risk.
 - Hardworking, Never Giving Up and Perseverance: Hard work is the foundation for building and sustaining a successful business. Entrepreneurs should never give up in attaining their goals, even at the time of failures. It is important to learn from setbacks and keep on moving towards their goals.
 - Confidence: Confidence plays a crucial role in making decisions, taking risks, and leading a team. Entrepreneurs need to believe in their abilities and vision to inspire trust in others, including employees, investors, and customers. Confidence brings vision and helps them navigate through uncertainty.

7.	Factors	Businessman	Entrepreneur
	Meaning	A businessman is a person who starts a business based on an idea already existing in a society. For example, opening a grocery shop, mobile shop, etc.	An entrepreneur is a person who starts an enterprise with a new idea or concept. For example, selling products through online services.
	Market Status	Market Player who creates his own place in the existing market.	Market Leader who creates his own market.
	Risk Factor	Risk factor is less.	Risk factor is high.
	Procedures	Businessman follows traditional procedures.	Entrepreneur follows unconventional procedures.
	Competition	High.	Low.
	Focus	Profits	Customers, employees, profits and society

- 8. Social Development—Creation of Jobs: An entrepreneur starts their business initially on a small scale. If the business shows some profits and grows over time, then an entrepreneur needs to expand operations, creating more jobs. Good quality jobs enable more people to earn money and have a good life.
- C. 1. a. Rahul starts a shop to sell Chaat and special Paani Puri. He is an Entrepreneur.
 - b. Shahid becomes the manager of a dealership selling food products. He is an Employee.



- c. Ritu leaves the company she worked for and starts catering food for marriage programmes. She is an Entrepreneur.
- 2. a. Arun bakery, which makes and sells bread to people. Product
 - b. Ram's repair shop, which repairs motorcycles. Service
 - c. Hari's hair salon, where he cuts hair for women and men. Service



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5. Green Skills-I

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Reuse of the products will save the cost of making disposable products. This will help in saving more money which will work in favour of the country's economy and ultimately less waste to manage.

Recycling is the most eco-friendly method of waste disposal. In this process, the waste material is reproduced to create another product which can be used for some other purposes.

Yes, Finland is often recognized as a leader in sustainable living, with a strong focus on environmental protection and green initiatives, and it is known for its clean air and water, vast forests, and commitment to renewable energy.



- 1. The government of India launched the Green Skills Development Programme (GSDP) in India in the year 2017.
- 2. People possessing Green Skills are getting jobs in the fields of agriculture, manufacturing, Research and Development (R&D), administrative, and service activities that are aimed at sustaining and protecting the environment. These jobs are called Green Jobs.
- 3. Renewable Energy, Green Buildings, Green Transport.
- 4. Soil pollution is the contamination of soil with harmful chemicals or waste, negatively impacting its quality and ecosystem.



SECTION A (Objective Type Questions)

A. 1. a. 2. a. 3. a. 4. b. 5. b

6. c.

B. 1. ecosystem 2. 8 3. recycled 4. Chemical fertilizers

5. aquatic

C. 1. False 2. False 3. True 4. True 5. False

6. False 7. True 8. True 9. False 10. True

SECTION B (Subjective Type Questions)

- A. 1. During the rainy season or floods, the vegetative cover of the stream bank is often washed away into the stream, leading to soil erosion. This can be prevented by forming vegetation, constructing rock ripraps, planting trees, and growing native grasses and shrubs along a stream bank.
 - 2. Carbon dioxide, Methane
 - 3. In this method, the soil is ploughed along the contour to decrease the soil runoff. By growing the crops in a contour pattern, plants can absorb more rain water and thus minimise the soil erosion.
 - 4. Global warming refers to the increase in the average temperature of the Earth's atmosphere mainly due to greenhouse gases (carbon dioxide, CFC's) produced by a lot of human activities.
 - 5. Renewable: Resources which occur in abundance and are renewed on their own by our mother nature through the natural process of recycling, replacement, and reproduction are called renewable resources. For example, Forest, wind, water, sunlight, geothermal (energy from the heat inside the earth).
 - 6. It aims to develop green skilled workers having technical knowledge and commitment to sustainable development. It will help in attainment of Nationally Determined Contributions (NDCs), Sustainable Development Goals (SDGs), National Biodiversity Targets (NBTs) and Waste Management Rules 2016.
 - 7. Using renewable energy (example, using solar power and wind energy)
 - Water and waste management
 - Rain water harvesting
 - 8. Green Transport: It supports a well-planned transportation system with minimum damage to the forest and environment. It also promotes efficient use of fuel that produces minimum greenhouse gases and also uses alternate sources of fuel like CNG, battery, etc.
 - 9. An ecosystem is defined as a community where living and non-living things interact with each other and their surrounding environment to form a balanced system.

- 10. Planting trees and grass
 - i. Building check dams
 - ii. Using mulching techniques
 - iii. Promoting terrace farming
 - iv. Avoiding overgrazing
- 11. Solar energy, Wind energy, Hydropower, Geothermal energy, Biomass energy, Tidal energy, Wave energy, Hydrogen fuel
- 12. Water is an essential natural resource for the existence of life. Our body is made up of 70% of water. We need water for agricultural, industrial, household and recreational activities. We can conserve water by using the given measures:
 - By doing rainwater harvesting.
 - Setting up water treatment plants to reuse the water for irrigation or other purposes.
 - Judiciously using water at homes, restaurants, social gatherings and workplaces.
- B. 1. Environmental imbalance happens when natural ecosystems are disturbed. Some major factors include **deforestation**, which destroys habitats and reduces oxygen levels, and **pollution**, which contaminates air, water, and soil. **Overpopulation** increases demand for resources, leading to excessive waste and depletion. **Industrialization** releases harmful chemicals into the environment, harming wildlife and humans. **Climate change**, caused by greenhouse gases, leads to extreme weather, affecting ecosystems. Protecting nature can help restore balance.
 - 2. The given methods for conserving food are used at different stages of food transfer from producer to consumer level:
 - Cooling: Certain varieties of food can be refrigerated, while others can be frozen to stop the growth of harmful microorganisms like bacteria, mould, fungi, etc. on the food, thus preventing it from being unfit for consumption.
 - Heating: Microorganisms are destroyed by heat at specific temperature. This process includes pasteurisation, cooking, and sterilisation.
 - Removing moisture from food: This will hinder the growth of microorganisms on food by drying, salting, pickling, sugaring, and smoking food.
 - Use of preservatives: Food preservatives like Sodium Benzoate, Parabens, Formaldehyde, etc. are used to increase the shelf life of food items by keeping it fresh for a long time.
 - 3. Repurpose: It refers to finding a new use or function for something that was originally intended for a different purpose. It's about creatively finding ways to extend the lifecycle of an item rather than disposing of it.
 - Transforming old clothing into cleaning rags.
 - Using glass bottles as decorative vases.
 - Repurposing wooden pallets into furniture.
 - Turning old furniture into garden planters or using glass jars as storage containers.

Reduce: By reducing waste, we reduce the use of resources, so that there are less efforts for waste management.



- Avoid printing non-essential documents. If needed, print on both sides of the page.
- If something has to be bought in large quantities, then buy in bulk altogether to reduce packaging and transportation.
- Buy products that can do more than one thing.
- Buy reusable items rather than disposable ones.
- Carry your own reusable shopping bags to avoid using plastic bags.
- Reduce the use of single-use plastics, plastic packaging, and styrofoam cups.

Reuse: Reuse of the products will save the cost of making disposable products. This will help in saving more money which will work in favour of the country's economy and ultimately less waste to manage.

- Second-hand stores should be opened in various locations, so that people can send their things like clothes, toys, utensils and other products which are of no use for them and others in need can reuse them.
- Give unwanted toys and books to NGOs and people in need.
- Use reusable packaging material for food and other items. Recycle Recycle is the most eco-friendly method of waste disposal. In this process, the waste material is reproduced to create another product which can be used for some other purposes.
- People should be encouraged to buy products that are made from recycled materials.
- Automobiles' parts, cans, construction material, etc. are all made of metals that can be recycled.
- Any plastic bottle or container for food storage must be recycled.

Refuse: In an environmental context, "refuse" means to actively choose not to use or accept something, especially items that are wasteful or harmful to the environment.

- Refusing single-use plastic bags by using reusable cloth bags instead, or refusing to buy products with excessive packaging.
- Refusing single-use plastics like straws and bags.
- Avoiding products with excessive packaging.
- Saying no to disposable utensils and opting for reusable ones.
- 4. Here are four main causes of soil pollution:
 - Industrial Waste Factories release harmful chemicals and heavy metals into the soil, making it toxic.
 - ii. Agricultural Chemicals Excessive use of pesticides and fertilizers contaminates the soil and reduces its fertility.
 - iii. Plastic and Waste Dumping Non-biodegradable waste like plastic and electronic waste pollutes the soil.
 - iv. Deforestation Cutting down trees removes natural protection, making the soil prone to erosion and pollution.

- 5. Biotic: It refers to living organisms of the ecosystem which can be plants and animals. Plants are considered to be autotrophs which make their own food by trapping energy of the sun. This energy flows through all the other living components when plants are consumed by plant eating animals which in turn are eaten up by other bigger animals.
 - Abiotic: Abiotic components are the non-living components of an ecosystem. It includes air, water, soil, minerals, sunlight, temperature, nutrients, etc.
- 6. People with green jobs ensure that resources in an economy are allocated in a fair and an equitable manner. These jobs help in:
 - Ensuring judicious consumption of energy and raw materials.
 - Reducing the greenhouse gas emissions especially that of carbon dioxide.
 - Minimising pollution at all levels.
 - Putting in place proper waste management systems that minimise waste generation and contamination of the environment.
 - Protecting and restoring our ecosystems.
 - Positively impacting our country's green economy.
 - Producing eco-friendly goods or services.
- 7. Fourth Partner Energy: This green project makes solar energy accessible. It was founded in 2010 by Vivek Subramanian, Saif Dhorajiwala and Vikas Saluguti. Fourth Partner Energy (4PEL) focuses on financing and building rooftop solar projects for commercial, industrial, and residential clients. It recently raised \$125 million in equity funding from Norwegian investment fund Norfund and existing shareholder, The Rise Fund.
- 8. Social benefits of green economy are:
 - It improves the health and well-being of the society which increase the productivity of the country and reduce the costs of health care.
 - It improves livelihood status and poverty rate.
 - It reduces environment related health problems.
- 9. a. Salinity Management: The water, after evaporating from the soil, leaves behind salt. It is generally seen in the areas near sea, lakes, oceans and in weathering of rocks. It affects soil fertility and reduces absorption of water by plant. Using humic acids can prevent this or growing crops like saltbush can rejuvenate soil and replenish lost nutrients.
 - b. No-Till Farming: It is a method of growing crops without tilling the soil. This practice will not disturb the top layer of soil and the last crop present in the top layer will be decomposed fast which helps in maintaining the soil nutrients and preventing soil erosion.
 - c. Crop Rotation: It is the system of cultivating different varieties of crops on the same piece of land across different seasons. This helps to conserve soil fertility as different crops have different requirements of soil nutrients.

10. The concept of green growth aims at achieving economic growth that is socially inclusive and environmentally sustainable. The Ministry of Environment, Forest, and Climate Change, Government of India recognized green growth in its vision, wherein 'poverty eradication' along with green growth is to be seen as the focal point for green economy. The Finance Commission of India articulated green growth as involving "rethinking growth strategies with regard to their impacts on environmental sustainability and the environmental resources available to poor and vulnerable groups." The extent to which its economy will "grow green" will depend on its ability to reduce the quantity of resources required over time to support economic growth that leads to enhancement of social equity and job creation. Green growth could play an important role in balancing these priorities. To ensure sustainable development, any activity that is expected to bring about economic growth must also consider its environmental impacts so that it is more consistent with long term growth and development. This means vehicles on the road which leads to traffic congestion, waste of time for all the commuters, and a great load of particulate matter and carbon monoxide from the exhaust of vehicles should be slowly replaced with an efficient public transport system.

- C. 1. Environment-friendly fuels I would suggest using biogas, LPG, solar cookers, or smokeless chulhas as they cause less pollution and are safer for health. These fuels produce less smoke, reducing air pollution and health problems. Using cleaner fuels also helps in conserving natural resources.
 - 2. Disposing of books responsibly I would donate usable books to needy students or libraries and send damaged ones for recycling to reduce waste and protect the environment. Reusing books saves paper and trees. Organizing a book donation drive in school can also help share knowledge with others.



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CLASS ACTIVITY Pg. 170

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Part-B: Subject Specific Skills

1. Introduction to IT-ITeS Industry

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- 1. Digital India Programme
- 2. Business Process Management (BPM) is defined as a discipline that focuses on standards to manage and improve the business processes.
- 3. Software Products Development (SPD): Software available through sale, lease, rental or as a service for the IT-BPM industry.
- 4. Reliance, Infosys, Wipro, TCS, etc.

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The World Digital Library (WDL) is an international digital library operated by UNESCO and the United States Library of Congress.



SECTION A (Objective Type Questions)

A.	1. c.	2. b.	3. c.	4. d.	5. d.
В.	1. Digita	l India 2. eSign	3. E-Gove	rnance services	4. Insurance
	5. Nation	nal Scholarship Portal	6. SWAYA	AM portal	
C.	1. d.	2. e.	3. a.	4. c.	5. b.
D.	1. True	2. False	3. True	4. True	5. True
	6. False				

SECTION B (Subjective Type Questions)

- A. 1. Onshore/Domestic Outsourcing: It is outsourcing services within the same country but may be located in a different city or a state. The main advantage is you get a skilled team in the same time zone, that shares the same language and culture.
 - Offshore Outsourcing: It is outsourcing services outside the company's own country. The main advantage may be better geographical area, political stability, skilled low-cost labour and better tax plans.
 - 2. Customer Support services like call center, live chat support, social media support like Facebook, blogs and forums, emails and helpdesk.
 - Human Resource Management like recruitments, compensation and benefits, training, enhancing performance and HR data maintenance.

- Payroll Management like salary generation, calculating perks, deductions, salary and incentive annual increase details cost to the company calculations.
- 3. ICT is used for education-anywhere, anytime in the following ways:
 - Any student in India can access the NCERT book online through the website https://epathshala.nic.in/ or mobile app.
 - Apart from this there are a variety of websites and mobile apps to access educational resources on any topic.
 - You can also contact a teacher or a trainer via the Internet to use WBT (Web-based Training).
- 4. A library is a collection of printed and non-printed material organised and maintained by an organisation and academic institutions to provide resources to their people. Almost every function carried out in the library has witnessed a remarkable change due to Information Technology.
- 5. Digilocker, MyGov.in, Wi-Fi Hotspots, etc.
- 6. IT has increased the productivity of industries and reduced the time required to achieve the desired goal.
- B. 1. Many games are created by using animated software. These games can either be played online, through apps or through dedicated video game machines.
 - Amazon, Netflix, Disney Hotstar and many more are live streaming services that use information technology to sell their content to the customers on a subscription basis.
 - 2. Multinational corporations (MNCs) are large companies that manage operations and services in multiple countries while maintaining a central headquarters, usually in one specific nation. These companies often influence global markets through their expansive reach, advanced technologies, and vast resources. MNCs benefit from access to diverse markets, lower production costs in some regions, and a broader customer base. Examples include tech giants like Apple and manufacturing firms like Toyota. However, they also face challenges like managing cultural differences, navigating international regulations, and addressing concerns about their impact on local economies and labor.
 - 3. Digilocker: It provides facilities for storing important official documents like Voter ID Card, Pan Card, BPL Card, Driving License, education certificates, etc. in the cloud.
 - MyGov.in: It is an online platform to engage citizens in governance through a "Discuss", "Do" and "Disseminate" approach.
 - eSign Framework: It enables users to digitally sign a document online using Aadhaar authentication.
 - Swachh Bharat Mission mobile app: It enables organisations and citizens to access information regarding the cleanliness drive and achieve the goals of the mission.
 - 4. Banks can reach out to more customers easily and provide better services to them through IT.
 - ATM cards, debit and credit cards, cash deposit machines, online banking, telebanking, mobile banking, etc. are some of the important features of modern banking which is possible only by implementing the latest information and communication technology.
 - Nowadays lockdown during COVID times has taught us that account opening can easily be done from home by following certain online document submission and filing up the required details.

- The development of world-wide networks has significantly reduced the cost of global funds transfer. This has helped a business to flourish with minimum hidden charges in the banking transaction.
- 5. Computer controlled robots are designed to do tedious and difficult tasks in almost all the fields.
 - Mainframes and supercomputers are used in scientific calculations, weather forecast, defence services and astronomy.
 - Doctors and microbiologists use computers to do detailed analysis of chemical balance inside the human body and helps in the diagnosis of different types of diseases.
 - Satellites are the backbone of communication. It is of great importance in astronomy and space technology.
 - Visual 3D display of the object images through software tools for advanced study and analysis.
 - Computer-aided designs and manufacturing is used to design and manufacture products or machines used in different fields.
- C. 1. Dimple can enhance her business skills by taking online courses in business management, participating in entrepreneurship workshops, attending networking events to learn from experienced entrepreneurs, and staying updated on market trends. These actions will help her successfully expand her business.
 - 2. a. For designing a company's budget: Analytical BPM tools to analyze financial data and plan budgets.
 - b. For hiring employees and dealing with their salaries: Human Resource BPM solutions for recruitment and payroll management.
 - c. For integrating the sales and marketing department: Sales and Marketing BPM tools to ensure seamless collaboration.
 - d. For targets and contracts: Operational BPM tools for efficient contract and target monitoring.
 - e. For legal services: Legal BPM systems to handle documentation and ensure compliance.

- 3. a.
- 4. d.
- 5. d.
- 6. c.



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Data Entry and Keyboarding Skills



1. d.

2. a.

3. b.

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SECTION A (Objective Type Questions)

A. 1. c.

2. a.

3. d.

4. c.

5. d.

B. 1. Ergonomics

2. Print Screen 3. Num Lock

4. Mouse

5. enabled

6. www.rapidtyping.com

7. Statistics

8. Virtual Keyboard

9. Alt+O

10. Characters Per Minute

C. 1. True

2. True

3. True

4. False

5. True

6. True

D. 1. d.

2. e.

3. b.

4. a.

5. c.

SECTION B (Subjective Type Questions)

- A. 1. No, if no error occurs during character typing, it won't appear in the Error overview since this section only logs actual errors.
 - 2. Three
 - 3. The "Options" on the Title bar typically provide quick access to settings or features related to the software.
 - 4. Virtual keyboard: It is placed just below the status bar and helps you learn typing using the touch typing method, by using all the ten fingers.
 - 5. After every lesson you complete, the Rapid Typing Tutor displays your achievement in the lesson by showing your result in a separate window.
- B. 1. Num Lock: It is present on the top-left corner of a keyboard's numeric keypad. It toggles the use of numbers on the numeric keypad. If it is ON, then the numbers can be used as a basic calculator, otherwise the alternate functions of the keys are performed.
 - Caps Lock: It works as a toggle key to switch between the capital letters or small letters at the time of giving an input to the computer. If the Caps Lock key is ON, then capital letters are printed and if it is OFF, then small letters are printed.

- 2. Enter: There are two Enter keys on the PC keyboards and laptop Keyboard; one is above the right Shift key and the other on the bottom right of the numeric keypad. Some of the important functions performed by the Enter key are:
 - Send a cursor to a new line
 - Create a blank line.
 - Start a new paragraph
 - · Submit a form
 - Activate a selected option.
- 3. Some factors of typing ergonomics are as follows:
 - · Sitting Posture
 - · Position of Hands
 - Monitor Placement
 - · Mouse and Keyboard Placement
 - · Chair and Table Placement
 - Placement of Matter to be Typed
- 4. The keyboard learning process begins with the Second Row, known as the Home Row, followed by the Third Row (Upper Row), First Row (Bottom Row), and Fourth Row (Number Row). Each finger is responsible for operating the keys assigned to it in each row. It is crucial to remember that each finger should only press its designated keys.
 - Allocation of Keys to Fingers on the Second Row (Home Row)

Place four fingers of each hand on Home Keys. The remaining two keys 'g' and 'h' on the second row are operated by the Forefingers (Index Finger) of the left and right hand, respectively.

The fingers of both the hands are kept on the Home Row keys, and the thumb of both the hands are kept on the Spacebar key. This position of hand in the beginning of the typing is called the Base Position. Keyboards usually have a small protruding bar, or a dot on the F and J keys to help you locate the base position without looking at the keyboard.

The Left-hand fingers' base position will be:

- Key A Left hand's little finger
- Key S Left hand's ring finger
- Key D Left hand's middle finger
- Key F Left hand's index finger

The Right-hand finger's base position will be:

- Key; Right hand's little finger
- Key L Right hand's ring finger
- Key K Right hand's middle finger
- Key J Right hand's index finger



• Allocation of Keys to Fingers on the Third Row (Upper Row)

The next step involves learning to reach from the Home Row to the row above it. This starts with the left-hand little finger reaching from 'a' to 'q' and the right-hand little finger reaching from ';' to 'p'. Next, the ring fingers are placed on the adjacent keys, with the left ring finger reaching for 'w' and the right ring finger reaching for 'o'.

When typing on the upper row, keep your fingers on the Home Row. Lift the fingers of your left hand one by one to strike the upper row keys, typing q, w, e, r, and t (note that r and t are typed by the same finger). Next, lift the fingers of your right hand one at a time to strike the upper row keys, typing p, o, i, u, and y (u and y are typed by the same finger). Ensure that only one finger moves at a time while the other fingers remain on the Home Row.

Allocation of Keys to Fingers on the First Row (Bottom Row)

After mastering the keys on the Home Row and the Upper Row, the next step is to learn how to operate the keys on the Bottom Row. These keys include Z, X, C, V, B, N, M, Comma, Period, and the Slash (/).

• Allocation of Keys to Fingers on the Fourth Row (Number Row)

In this row, type 1, 2, and 3 with the little, ring, and middle fingers of the left hand, respectively, and 4 and 5 with the index finger. Similarly, type 0, 9, and 8 with the little, ring, and middle fingers of the right hand, respectively, and 7 and 6 with the index finger.

- 5. Statistics Panel: It consists of four components:
 - i. Statistics Toolbar: It has buttons for selecting courses, removing selected statistics and customising the statistics display options.
 - ii. Course Diagram/Statistics: This shows the common statistics of all the lessons of the current course.
 - iii. Lesson Diagrams/Statistics: This shows the complete statistics of each character of the selected lesson in the course diagram.
 - iv. Lesson Statistics Table: This shows the statistics of the selected lesson in the course diagram.

6.

In Terms	Typing	Speed	Example			
of	Gross Speed	Net Speed	Supposition	Gross Speed	Net Speed	
Word	WPM = (Words without errors + Words with errors) / Time spent in minutes	Net WPM = WPM - (Words with errors/ Time spent in minutes)	A person typed 50 words per 2 mins. with errors in 6 words.	Gross Speed = 50/2 => 25 wpm	Net Speed = 25 - (6/2) => 22 wpm	
Characters	CPM (Characters without errors + Characters with errors) /Time spent in minutes	Net CPM = CPM (Characters with errors/ Time spent in minutes)	A person typed 250 characters per 2 mins. with errors in 30 characters.	Gross Speed = 250/2 => 125 cpm	Net Speed = 125-(30/2) => 110 cpm	

In Terms	Typing	Speed	Example		
of	Gross Speed	Net Speed	Supposition	Gross Speed	Net Speed
Keystrokes	KPM = (Keystrokes without errors + Keystrokes with errors) /Time spent in minutes	Net KPM = KPM - (Keystrokes with errors/ Time spent in minutes)	A person typed 200 keystrokes per 2 mins. with errors in 40 keystrokes.	Gross Speed = 200/2 => 100 Kpm	Net Speed = 100-(40/2) => 80 kpm

- 7. Step 1: Select Win for windows keyboard or Mac for mac keyboard.
 - Step 2: Select the keyboard type from the list as Desktop.
 - Step 3: Select the layout type as 104 keys (standard layout).
 - Step 4: Choose Enter key: flat and Numeric pad type (say 1), that match with your physical keyboard.
 - Step 5: Choose the scheme of fingers position as Two hands.
 - Step 6: Change the scheme colours in case you want.
 - Step 7: Click on OK to complete the configuration setting wizard.
- 8. After every lesson you complete, the Rapid Typing Tutor displays your achievement in the lesson by showing your result in a separate window.

The text area displays the horizontal lines made up of different colours.

- · Green colour in the line shows good results.
- · Red colour in the line shows bad results.
- Yellow colour shows the time frame exceeded by you.
- Orange colour shows an incorrect character typed and time frame for typing correct character exceeded by you.

The result window shows your performance in the current lesson in terms of:

- Overall rating
- Speed
- Accuracy
- Slowdown

Below the coloured horizontal lines, there are three tabs in the result window:

- Next step: This tab helps you to either go to the next lesson or try again the same lesson.
- Detailed statistics:This tab displays in detail, the performance in the current lesson, in terms of typing speed, accuracy and keystrokes.

On the bar chart,

X-axis corresponds to the letters used in the lesson;



• Y-axis shows the errors or delays related to each letter. Characters with no delay or no mistake will not be shown in the graph.

The green horizontal line in the centre is the demarcation line for good or bad results. The bars below this line are in red and interpreted as a bad result. The bars above this line are green and interpreted as good results. In keystroke diagrams, on the right side, the key names are of the same colour as the finger zone.

- Errors overview: This tab displays the errors that had occurred during the lesson. This will help you to better understand, which letters are still hard for you to learn typing, through touch typing method.
 - a. Green characters show the correct characters pressed on the keyboard.
 - b. Yellow characters show that the time frame has been exceeded.
 - c. Red characters show incorrect characters pressed on the keyboard.
 - d. Orange characters show incorrect characters for which the time for typing the characters has been exceeded.
- C. 1. Net speed = (150 6)/30 = 4.8 words per minute. Gross speed = 150/30 = 5 words per minute. Accuracy percentage = $(4.8/5) \times 100 = 96\%$. Analyzing error trends over time can identify patterns, enabling focused improvement in weak areas.
 - 2. Sneha should sit with a straight back, use a chair with lumbar support, ensure the screen is at eye level, keep feet flat on the floor, and take short breaks to stretch every hour.
 - 3. Amit can master typing by first familiarizing himself with the keyboard layout, practicing proper finger placement, increasing speed and accuracy with exercises, and regularly assessing his progress through speed and error tests.
 - 4. Rohan can guide her to use the left click for selection, the right click for options, double click for opening items, and the mouse roller for scrolling through pages. Regular practice will help her gain comfort and confidence.
 - 5. a.
 - 6. d.
 - 7. a.



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Digital Documentation

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Bravo



- 1. Toggle Print Preview
- 2. Formatting
- 3. Two Pages Preview
- 4. Pages



SECTION A (Objective Type Questions)

A. 1. b.

C. 1. True

- 2. a.
- 3. c.
- 4. b.
- 5. b.

- B. 1. Formatting
- 2. Full Screen 3. Save As
- 4. Print Preview

- 5. dialog box
- 2. True
- 3. False
- 4. False
- 5. False

SECTION B (Subjective Type Questions)

- A. 1. The three types of files are Main Document, Data Source, and Merged Document.
 - 2. Editing tools (cut, copy, paste), formatting options (font, color, alignment), and spell check are important features.
 - 3. Thesaurus is a tool used to find synonyms and antonyms to enhance vocabulary and improve writing clarity.
 - 4. Select the text, then use Clear Formatting from the toolbar.
 - 5. Upper Case, Lower Case, Cycle Case, Sentence Case, Capitalize Every Word, Toggle Case, **Small Capitals**
- B. 1. Click on the Edit menu \rightarrow Undo option from the menu bar.

OR

Click on Undo button present on the standard toolbar. This button has a drop-down arrow to allow you to undo multiple previous actions.

2. To use Find and Replace option, follow the given steps:

Step 1: Click on Edit menu \rightarrow Find and Replace option or press Ctrl + H using keyboard. The Find and Replace dialog box will appear.

- Step 2: Type the text you want to find in the Find box.
- Step 3: To replace the text with different text, type the new text in the Replace box
- Step 4: You can check on Match case check box if you want to match the word with uppercase/lowercase.
- Step 5: You can check on Whole words only check box if you want to search for the whole word and not a part of any other word.
- Step 6: Since both the above are checkbox then you can select both the options together, it will search for the whole word only and will match the specified case also.
- Step 7: When you have set up your search, click on Find All button to select all the occurrences of the specified searched word in the given document.
- Step 8: After the text is found we have a choice of replacing it with a new word only at the first match by selecting Replace button or replacing all the matches with the new word by clicking on Replace All button.
- 3. To correct the incorrect spelling, follow the given steps:
 - Step 1: Right-click on the word with a red wavy line. A shortcut menu will appear. It suggests a list of words for replacement which you can choose.
 - Step 2: Click on the suitable word to replace it with incorrect word.

To check spelling, you can also follow these steps:

Step 1: Click on Tools menu \rightarrow Spellings option. The Spelling dialog box will appear.

OR

Click on the Check Spelling button abc on the standard toolbar. The Spelling dialog box will appear.

- Step 2: Choose the correct spelling from the Suggestions list.
- Step 3: Click on the Correct button, to change the spelling. The next incorrect spelling will be highlighted and the Suggestions list will change accordingly.

OR

Click on Correct All button, to change all the incorrect spelling in one click.

OR

Click on Ignore Once button to ignore the incorrect spelling of the selected word.

OR

Click on Ignore All button to ignore the incorrect spelling of all the incorrect words.

OR

Click on Add to Dictionary button, in case a correct word is highlighted as an incorrect word and you want to add it in the existing dictionary. In this way, next time it is not marked as wrongly spelled word.

- Step 4: Click on Close button, after completing the desired action.
- 4. To insert an image in a document, follow the given steps:
 - Step 1: Place the cursor in the document where you want to insert the image.

Step 2: Select the Insert menu \rightarrow Image option. The Insert Image dialog box will appear.

OR

Click on the Insert Image button from the standard toolbar. The Insert Image dialog box will appear.

Step 3: Select the image and click on the Open button.

The selected image will be inserted at the desired position.

- 5. To display non-printing characters in the document click on Toggle Formatting Marks button (1) present on standard toolbar. It works like a toggle key. You click once to switch it on and click again to switch it off.
- C. 1. To add background colour to the paragraph, follow the given steps:
 - Step 1: Select the paragraph.
 - Step 2: Select the Format menu \rightarrow Paragraph option \rightarrow Area tab \rightarrow Color option.
 - Step 3: Select the desired background colour.
 - Step 4: Click on the OK button.

The selected colour will appear in the page background.

- 2. To merge the cells, follow the given steps:
 - Step 1: Select the two cells in the first row that need to be merged.
 - Step 2: Click on the Table menu \rightarrow Merge Cells option.

OR

Right-click on the selected cells. A shortcut menu will appear. Click on the Merge Cells option. The cells will be merged.



Do it yourself.



Do it yourself.

4. Electronic Spreadsheet

Find on Google Pg. 292

Dan Bricklin and Bob Frankston



- 12th row in 10th column: J12
- 10th row in 16th column: P10
- 26th row in 31st column: AE26
- 15th row in 39th column: AM15



- a. 4
- b. i. B2:C4 ii
 - ii. E5:E13
- iii. D16:G16
- iv. B19:D21

- c. E5:E13
- d. D16:G16
- e. B2:C4 and B19:D21



- 1. Scroll Bars
- 2. We can rename, edit, delete or add new sheet.

Find on Google Pg. 298

To remove duplicate values in a range of cells, you need to perform the following steps:

- Step 1 Select the Range of cells from which you want to remove duplicates.
- Step 2 Go to the Data menu \rightarrow Click More Filters \rightarrow Select Standard Filter.

Step 3 In the dialog box:

- Under Field Name, select the column name.
- Under Condition, choose "= Not Empty".
- Tick the "No duplication" checkbox at the bottom.

Step 4 Click OK.

The filtered list without duplicates will be displayed.

You can copy and paste it to another location if needed.



- A1
- XFD1048576



The value in Cell C1 will automatically update to 40.



- 1. = 8-4/2
 - = 8 2
 - = 6
- 2. = 5*5+8
 - = 25 + 8
 - = 33
- 3. = 3+5*4
 - = 3 + 20
 - = 23
- $4. = 2^5+8$
 - = 32 + 8
 - = 40
- $5. = 3+2^2$
 - = 3 + 4
 - = 7
- $6. = 5+6*2^2$
 - = 5 + 6 * 4
 - = 5 + 24
 - = 29

$$7. = 8/4*4$$

$$8. = -4/2 + 2$$

$$= -2 + 2$$

$$9. = 1+2^2-2$$

$$= 1 + 4 - 2$$

$$10. = 4*3/2$$

$$11. = 5 + 6^2 + 4 - 3$$

$$= 5 + 36 * 4 - 3$$

$$= 5 + 144 - 3$$

$$12. = (2+3-1)*6+212/6$$

$$= 4 * 6 + 35.33$$

$$13. = 64/6 + 2*4 - 1$$

$$= 10.67 + 8 - 1$$

14. = 7+2-1*1/1^2

$$= 7 + 2 - 1 / 1$$

$$= 7 + 2 - 1$$



- Horizontal Alignment
- Vertical Alignment
- Text Orientation
- Wrap Text
- Merge and Center



C. 1. False

	Α	В	С	D	E	F	G	H
1		City	Rainfall July, 21	Rainfall July, 21	Rainfall Aug, 21	Rainfall Sep, 21	Total	Average
2		1 Delhi	125	150	135	89	=SUM(C2:F2)	=AVERAGE(C2:F2
3		2 Gurugram	119	152	135	75	=SUM(C3:F3)	=AVERAGE(C3:F3)
4		3 Noida	108	152	127	66	=SUM(C4:F4)	=AVERAGE(C4:F4)
5		4 Faridabad	99	145	123	68	=SUM(C5:F5)	=AVERAGE(C5:F5)
6		5 Ghazibad	99	148	125	73	=SUM(C6:F6)	=AVERAGE(C6:F6)
7								



SECTION A (Objective Type Questions)

A.	1.	C.	2. b.	3. a.	4. a.	5. d.
	6.	d.	7. d.	8. a.	9. b.	10. a.
В.	1.	Name Box	2. Formula bar	3. Cell address	4. Shrink to fit	cell size
	5.	Status bar				

SECTION B (Subjective Type Questions)

3. False

A. 1. Formula bar contains Name Box, Select Function button, Input Line, Function Wizard, and Formula button.

4. True

5. True

- 2. Relative referencing
 - Absolute referencing

2. False

- Mixed referencing
- 3. The AutoFill feature allows users to quickly fill a series of data (like numbers, dates, or patterns) by dragging the fill handle across adjacent cells.
- 4. a. Cell: The value displayed will depend on the values in C20 and D20 (if they exist).
 - b. Formula Bar: The formula =C20 D20 will be displayed.

 Reason: Since relative referencing is used, when the formula is copied down, it adjusts based on the new row number.
- 5. a. A3 is changed to 5

The value of D3 will be updated because it depends on A3. The new value will be calculated using the updated A3 value.

b. B3 is deleted

An error will appear in D3 because B3 is part of the formula and is missing.

- B. 1. a. =B4*C4
 - b. D5: =B5*C5
 - D6: = B6*C6
 - D7: = B7*C7
 - D8: =B8*C8

Or simply drag the formula from D4 down to D8.

- c. =SUM(D4:D8)
- d. = MAX(C4:C8)
- e. = MIN(C4:C8)
- f. =AVERAGE(C4:C8)
- q. = COUNTA(A4:A8)
- h. The best type of chart to represent this shopping data would be a Column Chart or Bar Chart that compare the Amount spent on each item.

Steps to insert:

- Step 1 Select the range A4:D8
- Step 2 Go to Insert → Charts → Column Chart
- Step 3 Choose a suitable style (e.g., Clustered Column) for a clear visual comparison.
- 2. a. The formula follows the BODMAS rule: $3 \times 8 = 24$, then 20 + 24 = 44.

The value in C1 will be 44.

- b. The MIN function returns the smallest value.
 - The smallest value in A1:D1 is -40, so E1 will display -40.
- c. The formula in E3 will be \$B3 + D3.

The absolute reference (\$B3) stays the same, but C3 changes to D3.

- 3. She should use the Charts feature to represent the data visually.
 - Column Chart: Uses vertical bars to compare data over time.
 - Line Chart: Shows trends over years with connected data points.
- 4. To generate a series of multiples of 11 easily in a spreadsheet the maths teacher should be advised to use the AutoFill feature with a simple formula.
 - Step 1: In Cell A1, type the first multiple of 11.
 - Step 2: In Cell A2, type the formula (=A1 + 11) to get the next multiple of 11.
 - Step 3: Press Enter

Step 4: Click on Cell A2 again, and then drag the fill handle down the column.

The spreadsheet will automatically fill the cells with the next multiples of 11.

- 5. Cell referencing refers to using cell addresses in formulas. The \$ sign makes a reference absolute, meaning it doesn't change when copied. For example, \$A\$1 keeps both row and column fixed, while A\$1 keeps only the row fixed.
- C. 1. a. = (B2 + C2) * 25%
 - b. = B2 + C2 + D2 E2
 - c. = MAX(F2:F8)
 - d. To represent the above data in the form of a suitable chart, perform the following steps:
 - Step 1 Select the data range (A1:F8).
 - Step 2 Click on the Insert tab.
 - Step 3 Choose an appropriate chart such as a Column Chart or Bar Chart to compare salaries effectively.
 - Step 4 Add labels and a title for better understanding.
 - 2. a. The formula in cell E2 is =SUM(B2:D2)
 - b. E3: =SUM(B3:D3)
 - E4: =SUM(B4:D4)
 - E5: =SUM(B5:D5)
 - E6: =SUM(B6:D6)
 - c. The formula in cell F2 is =AVERAGE(B2:D2)
 - d. F3: = AVERAGE(B3:D3)
 - F4: = AVERAGE(B4:D4)
 - F5: = AVERAGE(B5:D5)
 - F6: = AVERAGE(B6:D6)
 - e. B7: = MAX(B2:B6)
 - f. C7: = MAX(C2:C6)
 - D7: = MAX(D2:D6)
 - g. B8: = COUNT(B2:B6)
 - h. B9: = MIN(B2:B6)
 - i. C9: = MIN(C2:C6)
 - D9: = MIN (D2:D6)
 - 3. a. A B C D E F

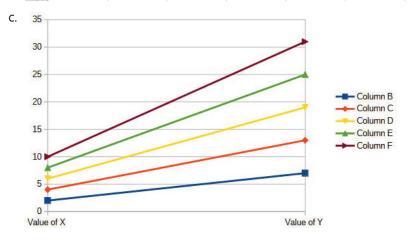
 1 Value of X 2 4 6 8 10

 2 Value of Y 9
 - b. Enter the formula in respective cell:

	Α	В	С	D	E	F
1	Value of X	2	4	6	8	10
2	Value of Y	=3*B1+1	=3*C1+1	=3*D1+1	=3*E1+1	=3*F1+1
3					8	

The output is as follows:

	Α	В	C	D	E	F	
1	Value of X	2	4	6	8	10	
2	Value of Y	7	13	19	25	31	
3							
A							

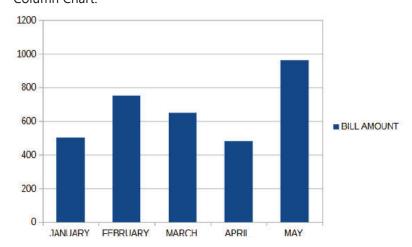


4. After entering data in spreadsheet:

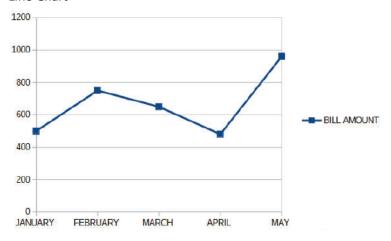
	A	В
1	MONTH	BILL AMOUNT
2	JANUARY	500
3	FEBRUARY	750
4	MARCH	650
5	APRIL	480
6	MAY	960
7		
•		

Three charts are as follows:

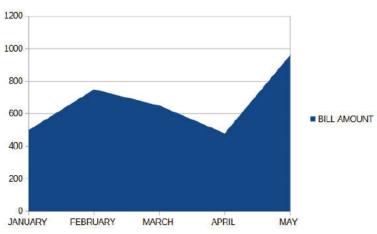
Column Chart:



Line Chart



Area Chart



The most appropriate chart for electricity bill data over time is the Line Chart, because: It clearly shows increase or decrease trends.

- 5. a.
- 6. b.
- 7. a.



Do it yourself.



Video based question Pg. 335

Do it yourself.



5. Digital Presentation

Find on Google Pg. 348

The first software displaying a presentation on a personal computer screen was VCN ExecuVision, developed in 1982.

	Unsolved	
V	Olisoivea	

SECTION A (Objective Type Questions)

A. 1. d. 2. c.

3. b.

4. a.

5. c.

B. 1. Workspace

3. Set Line Spacing

4. Format

5. Resizing

C. 1. False

2. False

2. Insert

3. True

4. True

5. True

SECTION B (Subjective Type Questions)

- A. 1. After the table is inserted into the slide, you can control its appearance, size, position, etc. by using Properties pane on the right side of the window or Table Properties button that appears on Table toolbar at the bottom of the screen, it has a set of Table Designs that you can use at any time on the inserted table.
 - 2. In this view all the slides of the presentation are displayed in a miniature form. It helps you check the order of the slides. In case needed the slides can be rearranged, added, deleted or hidden. It is used to sort slides with the 'drag and drop' method.
 - 3. Slide Master is one of the most powerful tools in LibreOffice Impress. It helps you set the default look of your slides in terms of fonts, backgrounds, images, styles, colours, and many other things. Whatever changes you make in the slide master will be reflected in all the presentation slides.
 - 4. Title Bar: Contains the name of the presentation and window control buttons.
 - Menu Bar: Contains menus like File, Edit, View, Insert, Format, etc.
 - Toolbars: Include Standard, Text Formatting, Drawing toolbars.
 - Slide Pane: Displays the miniature view of the slides.
 - 5. If you place your company logo on the Slide Master, then it will be automatically reflected on all slides in the presentation. This saves time and ensures a consistent appearance across the entire presentation.
- B. 1. a. **Notes View:** The Notes view displays two sections—the upper section has a miniature of the slide, and the lower section has an area for writing notes on the slide. These notes are not visible during the slide show presentation but can be used as a reference by the presenter during the presentation or taken as a printout for the audience to have a look at important points when the presentation is going on the screen.

- b. Slide Sorter View: In this view all the slides of the presentation are displayed in a miniature form. It helps you check the order of the slides. In case needed the slides can be rearranged, added, deleted or hidden. It is used to sort slides with the 'drag and drop' method. The user can use this view to work with a group of slides or with only one slide.
- c. Master Slide: Slide Master is one of the most powerful tools in LibreOffice Impress. It helps you set the default look of your slides in terms of fonts, backgrounds, images, styles, colours, and many other things. Whatever changes you make in the slide master will be reflected in all the presentation slides. You do not have to worry about its formatting at the time of creation of the slides if the layout is taken care of in slide master.
- 2. a. To open Slide Master
 - Click on the View → Master Slide option from the Menu bar.
 - b. Adding a new Slide
 - Click on the Slide → New Slide option from the Menu bar.

OR

• Right-click on the slide in the Slides pane and then select the New Slide option.

OR

Right-click in a space on the slide and select the New Slide option.

 $\bigcirc R$

• Click on the New Slide icon in the Presentation toolbar.

Shortcut Key: Ctrl + M

- c. Grouping an object
 - Click on the Selection tool on the Drawing toolbar and draw a rectangle around the multiple shapes to be grouped.
 - Now select Format → Group → Group option from the Menu bar.

OR

- Right-click on the selected shapes and select the Group option.
- 3. a. Ctrl + W
 - b. Shift + Tab
 - c. Ctrl + Alt + Shift + G
 - d. Ctrl + R
 - e. Ctrl + N
- 4. a. **Grouping:** Combines multiple objects into a single unit so that they can be moved, copied, or modified together.
 - **Ungrouping:** Breaks the grouped objects back into individual objects which can be manipulated separately.

b. • Slide: A single page of a presentation that contains content like text, images, etc.



- **Presentation:** A file in LibreOffice Impress consisting of a number of slides. Saved with extension .odp.
- c. **Bullets:** Used when the sequence of points is not important.
 - **Numbering:** Used when the sequence of points is important.
- d. Animation: Visual effects applied to objects (text, image, shapes, etc.) on a slide.
 - **Slide Transition:** Effects that take place between slides during a slide show.
- C. 1. To cover all the points in the class assembly presentation, Superna would have followed these steps using LibreOffice Impress:
 - Title Slide: Start with a title slide using a title layout (from predefined layouts).
 - Class Performance Video: Insert the video file using the Insert → Media option.
 - Plantation Drive Pictures: Insert images using Insert → Image or Gallery.
 - Visit to Old Age Home: Add images in a new slide using the same method.
 - Write-up on Triumphs: Add text boxes with formatted text using the Text Formatting Toolbar.
 - Thank You Note to Principal: Final slide with a thank you message, formatted using proper font size and colour.
 - Design Elements:
 - Use light background and bold colour patterns for titles.
 - Apply slide transitions and animations (moderately) for better impact.
 - Preview and run the slideshow using Slide Show → Start from First Slide.
 - 2. Rohan, working in an advertising firm, would structure his presentation as follows in LibreOffice Impress:
 - Slide 1 Title Slide: Title and subtitle about the advertising plan.
 - Slide 2 Concept: Use a predefined layout with text and visuals.
 - Slide 3 Advertising Medium Mix: Use tables or charts via Insert → Table/Chart.
 - Slide 4 Sample Creative: Insert sample images or mock-ups using Insert → Image.
 - Slide 5 Budget: Insert a table with data and format it using the Table Properties.
 - Slide 6 Expected Outcomes: Bullet points or charts to show expected results.
 - Design Features: Apply appropriate font size, animations, transitions, and keep in mind the target group.
 - 3. Say No to Plastic 6 Slide Presentation
 - a. Name Each Slide:
 - 1. Introduction
 - 2. What is Plastic?
 - 3. Why Say No to Plastic?
 - 4. Harmful Effects

- 5. Alternatives to Plastic
- 6. Conclusion and Call to Action
- b. Change Font for Slide Titles: Use the Text Formatting Toolbar to change font name (e.g., Arial Black), size, and colour.

c. Convert to PDF File: Follow:

File \rightarrow Export As \rightarrow Export Directly as PDF

Then, type file name \rightarrow click Save

- 4. a.
- 5. a.
- 6. c.



Do it yourself.