CBSE | DEPARTMENT OF SKILL EDUCATION

DESIGN (SUBJECT CODE - 830)

MARKING SCHEME FOR CLASS XII (SESSION 2024-2025)

Max. Time: 2 Hours **Max. Marks: 50**

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **20 questions** in two sections – Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 15 =) 20 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
   - **i.** This section has 05 questions.
   - **ii.** There is no negative marking.
   - **iii.** Do as per the instructions given.
   - **iv.** Marks allotted are mentioned against each question/part.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
   - **i.** This section contains 15 questions.
   - **ii.** A candidate has to do 10 questions.
   - **iii.** Do as per the instructions given.
   - **iv.** Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
Q. 1	**Answer any 4 out of the given 5 questions on Employability Skills (1 x 4 = 4 marks)**				
i.	(a) verbal communication	NCERT	Ch-1	Pg-7	**1**
ii.	(a) Self -Awareness	CBSE Study Material	Ch-2	Pg-20	**1**
iii.	(b) Guilt	CBSE Study Material	Ch-2	Pg-18	**1**
iv.	(c) Control panel	NCERT	Ch-3	Pg-66	**1**
v.	(b) Planning	CBSE Study Material	Ch-4	Pg-49	**1**
vi.	(c) Recycling	CBSE Study Material	Ch-5	Pg-64	**1**
Q. 2	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**				
i.	d) prototype	**CBSE Study Material**	Unit-1	15	**1**
ii.	b) Woven	**CBSE Study Material**	Unit-2	70	**1**
iii.	d) Occupational health and safety	**CBSE Study Material**	Unit-3	122	**1**
iv.	c) Photoshop	**Self-made (NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	-	**1**

v.	b) Law of closure	**CBSE Study Material**	Unit-1	38	**1**
vi.	b) Product design	**CBSE Study Material**	Unit-1	65	**1**
Q. 3	**Answer any 5out of the given 6 questions (1 x 5 = 5 marks)**				
i.	b) user centric design	**CBSE Study Material**	Unit-1	27	**1**
ii.	b) Hoshiarpur	**CBSE Study Material**	Unit-2	82	**1**
iii.	a) 2005	**CBSE Study Material**	Unit-3	123	**1**
iv.	b) sustainability	**Self-made** **(NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	-	**1**
v.	a) Focus Group	**CBSE Study Material**	Unit-1	29	**1**
vi.	b) Roll bending	**CBSE Study Material**	Unit-2	104	**1**
Q. 4	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**				
i.	b) Research	**CBSE Study Material**	Unit-1	27	**1**
ii.	a) casting	**CBSE Study Material**	Unit-2	93	**1**
iii.	c) Musculoskeletal disorder	**CBSE Study Material**	Unit-3	127	**1**
iv.	• Enlarging the text size • Customizing color contrasts • Subtitles or captions on videos • Text below the images to describe them. (any one)	**Self-made** **(NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	-	**1**
v.	a) Material safety data sheet	**CBSE Study Material**	Unit-3	132	**1**
vi.	c) Empathize	**CBSE Study Material**	Unit-1	14	**1**
Q. 5	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**				
i.	b) The redesign rule	**CBSE Study Material**	Unit-1	13	**1**
ii.	b) plastic injection molding process	**CBSE Study Material**	Unit-2	117	**1**
iii.	a) formaldehyde and resin	**CBSE Study Material**	Unit-3	128	**1**
iv.	d) InDesign	**Self-made** **(NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	-	**1**

v.	b) solution based	**CBSE Study Material**	Unit-1	12	**1**
vi.	a) interface design	**Self-made (NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	-	**1**

SECTION B: SUBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE / CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
Answer any 3 out of the given 4 questions on Employability Skills in 20 – 30 words each (2 x 3 = 6 marks)					
Q. 6	To print a spreadsheet, the steps are: 1. Click File ➢Print. 2. The Print dialog box will appear. 3. Select the printer, the range to be printed, and the number of copies. 4. Click the Print button.	**NCERT**	Unit3	48	**2**
Q. 7	**(a) Initiative:** In the world of business, opportunities come and go. An entrepreneur must be able to initiate action and take advantage of an opportunity. Once a person misses out on an opportunity, it may not come again. Therefore, taking initiative on the part of the entrepreneur is a must. **(b) Willingness to take risks**: In any business, there is an element of risk involved. It implies that it is not necessary that every business shall earn a profit. This deters individuals to take up risks and start a business. However, an entrepreneur always volunteers to take risks to run a business and be successful. **(c) Ability to learn from experience:** An entrepreneur may make mistakes. However, once an error is committed, it must be tried that it is not repeated as it may lead to heavy losses. Therefore, the person must have the ability to learn from experience. **(d) Motivation:** It is necessary for success in every walk of life. Once you get motivated to do something, you will not rest until you complete it. **(e) Self-confidence**: For achieving success in life, a person needs to have confidence in oneself. Self-confidence is reflected in courage, enthusiasm and ability to lead. Therefore, a successful	**NCERT**	UNIT-4	81	**2**

	entrepreneur must have self-confidence. **(f) Hard work:** There is no substitute for hard work in life. While running a business, one problem or the other may arise every day. The entrepreneur has to be vigilant so as to identify the problems and solve them as early as possible. This requires hard work on the part of the entrepreneur. **(g) Decision making ability:** In running an enterprise, an entrepreneur has to take a number of decisions. Therefore, the person must be capable of making suitable and timely decisions. **(Explain any two)**				
Q. 8	Green jobs help: • increase the efficiency of energy and raw material. • reduce greenhouse gas emissions. • control waste and pollution. • protect and restore ecosystems. • support adaptation to the effects of climate change. **(any two)**	**NCERT**	UNIT-5	114	**2**
Q. 9	• **Reusing scrap material** For example, in paper mills, damaged rolls are sent back to the beginning of the production line, i.e., they are added as raw material. In manufacture of plastic items, off-cuts and scrap are re-incorporated into new products. • **Ensuring quality control** If the quality of products is maintained, there will be a decrease in rejected products, thus, reducing waste. Automated monitoring equipment are now being used, which can help identify production problems at an early stage. • **Waste exchange** This is where the waste product of one process becomes the raw material for another. It represents the way of reducing waste disposal through re-use. • **Managing e-waste** with advanced technology, we have also encountered problems in managing e-waste like old mobile phones, laptops and television sets. It is important to have sustainable development and plan judiciously for recycling e-waste. • **Use of eco-friendly material** Scientists have discovered various material, which are eco-friendly, for example, banana leaf and paper plates that are easily disposable, etc. These must be made easily available and their use needs to be encouraged. **(Explain any two)**	**NCERT**	UNIT-5	119	**2**

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)					
Q. 10	Main benefits of using Design Thinking at work are: • **Significantly reduces time-to-market:** With its emphasis on problem-solving and finding viable solutions, Design Thinking can significantly reduce the amount of time spent on design and development—especially in combination with lean and agile. • **Cost savings and a great ROI:** Getting successful products to market faster ultimately saves the business money. Design Thinking has been proven to yield a significant return on investment; teams that are applying IBM's Design Thinking practices, for example, have calculated an ROI of up to 300% as a result. • **Improves customer retention and loyalty:** Design Thinking ensures a user centric approach, which ultimately boosts user engagement and customer retention in the long term. • **Fosters innovation:** Design Thinking is all about challenging assumptions and established beliefs, encouraging all stakeholders to think outside the box. This fosters a culture of innovation which extends well beyond the design team. • **Can be applied company-wide:** The great thing about Design Thinking is that it's not just for designers. It leverages group thinking and encourages cross-team collaboration. What's more, it can be applied to virtually any team in any industry. **(any two)**	**CBSE Study Material**	Unit-1	17	**2**
Q. 11	In the loom, yarn processing includes shedding, picking, battening and taking-up operations. • **Shedding.** - Shedding is the raising of the warp yarns to form a loop through which the filling yarn, carried by the shuttle, can be inserted. • **Picking.** - The filling yarn emerges through a hole in the shuttle as it moves across the loom. A single crossing of the shuttle from one side of the loom to the other is known as a pick. •**Battening.** - As the shuttle moves across the loom laying down the fill yarn, it also passes through openings in another frame called a reed (which resembles a comb). - With each picking operation, the reed presses or battens each filling yarn against the portion of the fabric that has already been formed.	**CBSE Study Material**	Unit-2	73	**2**

	• **Taking up: -** the newly constructed fabric must be wound on a cloth beam. This process is called taking up.				
Q. 12	Below are the most common causes of injury and illness in the iron and steel industry: (i) slips, trips and falls on the same level; (ii) falls from height; (iii) unguarded machinery; (iv) falling objects; (v) engulfment; (vi) working in confined spaces; (vii) moving machinery, on-site transport, forklifts and cranes; (viii) exposure to controlled and uncontrolled energy sources; (ix) exposure to asbestos; (x) exposure to mineral wools and fibers; (xi) inhalable agents (gases, vapors, dusts and fumes); (xii) skin contact with chemicals (irritants (acids, alkalis), solvents and sensitizers); (xiii) contact with hot metal; (xiv) fire and explosion; (xv) extreme temperatures (xvi) radiation (non-ionizing, ionizing); (xvii) noise and vibration; (xviii) electrical burns and electric shock; (xix) manual handling and repetitive work; (xx) exposure to pathogens (e.g. legionella); (xxi) failures due to automation; (xxii) ergonomics; (xxiii) lack of OSH training; (xxiv) poor work organization; (xxv) inadequate accident prevention and inspection; (xxvi) inadequate emergency first-aid and rescue facilities; (xxvii) lack of medical facilities and social protection. **(any two)**	**CBSE Study Material**	Unit-3	123	**2**
Q. 13	**Taj Mahal:** Taj Mahal is one of the most fascinating architectural marvels in the world. Every year lakhs of tourists visit Agra to see the beauty of Taj Mahal. Taj Mahal is an extremely beautiful mausoleum made of white marble between 1631 and 1648 under the aegis of the Mughal Emperor Shah Jahan. It is ideally located on the banks of River Yamuna in Agra. **It costed around 32 crores during that time**. He built it in the memory of	**Self-made (NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	**-**	**2**

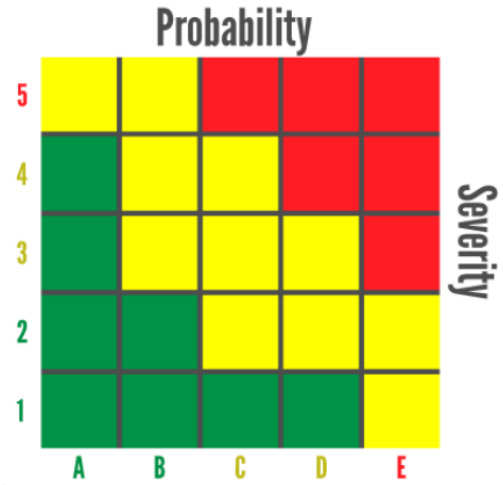
	his beloved wife Mumtaz Mahal. Its architectural beauty has earned it two prestigious titles, 'UNESCO World Heritage Site' and 'One of the Seven Wonders of the World'. **Architecture features of Taj Mahal:** **Taj Mahal is universally admired for its incredible architecture.** It is the most sparkling jewel of Muslim Art in India. Built with pure white marble (obtained from Makrana, Rajasthan) having extraordinary luster and texture. **The monument covers an area of 42 acres**. The monument is encircled by lush green gardens, lovely pools, and fountains. The main gateway located at the end of the long watercourse was originally made of solid silver. **The complex of Taj Mahal majorly consists of five structures - Darwaza (main gateway), Bageecha (gardens), Masjid (mosque), Rauza (main mausoleum) and Naqqar Khana (rest house).** The Taj Mahal complex consists of the tomb at its center (58 feet in diameter and 81 feet high). It is the main attraction. It is built in white marble at a square plinth raised 50 above riverbank to avoid seepage. There are four minarets on each side of the square which are deliberately made 137 m in height to emphasize the beauty of the dome. These minarets are a little titled outward instead of standing straight. The reason why it was built like this was to protect the tomb from being damaged in case any of the minarets falls due to any natural calamity. Inside the Taj Mahal lies the tombs of both Mumtaz Mahal and Shah Jahan. Both the tombs are inlaid with semi-precious stones. **The tomb of Mumtaz Mahal features calligraphic inscriptions of the 99 names of Allah.** **Architecture Style:** Taj Mahal is a perfect amalgamation of Indian, Islamic and Persian architectural styles. **It took around 22,000 workers to build this monument**. Stonecutters, painters, masons, dome builders, calligraphers, inlayers, carvers and other artisans were called from all over Asia and Iran. It leaves the onlookers gape in awe. It is not				

	only beautiful but built in such a way that even after hundreds of years, it still holds that fineness and charm. **The chief designer of this mesmerizing monument was Ustad Ahmad, who was an architect in the court of Shah Jahan from Lahore.** **Calligraphy on Taj Mahal** The calligraphy on the Taj Mahal is beautiful. The beauty of the black inscriptions over the white marble is an attractive feature of the edifice. The walls and pillars of the monuments are also adorned with calligraphy written in Thuluth script. Most of the inscribed verses are from the holy book of Islam- Quran. **(Any one monument of India)**				
Q. 14	**1. User Interviews**: The interview process is one of the most common and powerful ways to understand people. It can be considered the foundation for many of the methods designers use. The interview is a method for discovering facts and opinions held by potential users of the system being designed. **2. Focus Group**: A focus group is a moderated discussion that typically involves 5 to 10 participants and chaired by an impartial moderator. Its aim is to solicit focused feedback on specific issues or design ideas, giving designers firsthand experience of user reaction. **3. Card Sorting**: Card sorting is a research method used to understand the way that the intended users of a website naturally organize or think about different types of information or content. **4. Ethnography** – Contextual Enquiry: Ethnography is a social research technique based on studying people's behavior in everyday contexts, rather than under controlled conditions (such as a conference room in a focus group testing center). **5. Shadowing**: Shadowing is observing people in context. It is important that the people you are observing are not aware of the same since that might lead to change in their natural behavior. **6. Survey**: Surveys, which are also called questionnaires, are one of the key ways to gather quantitative data for analysis. Surveys rely on asking the same question in the same way to a large number of people, and obtaining a lot of responses.	**CBSE Study Material**	**Unit-1**	**29**	**2**

Q. 15	Some critiques of computer are given below: - 1. **Assumption of infinite speed:** It can't be assumed the infinite speed of the computer as it is not practical to assume the infinite speed. It creates problems in designers' thinking as well. 2. **Assumption of infinite Memory:** Like the speed of the computer, memory also can't be assumed infinite. Storage is always finite and this is an issue in computer design. 3. **Speed mismatch between memory and processor:** Sometimes it is possible that the speed of memory and processor does not match. It may be memory speed is faster or processor speed is faster. A mismatch between memory and processor leads to create problems in designing. 4. **Handling of bugs and errors:** Handling bugs and errors are huge responsibility of any computer designer. Bugs and errors lead to the failure of the computer system. Sometimes these errors may be more dangerous. 5. **Multiple processors:** Designing a computer system with multiple processors leads to the huge task of management and programming. It is a big issue in computer design. 6. **Multiple threads:** A computer system with multiple threads is always a threat to the designer. A computer with several threads should be able to multi-tasking and multi-processing. 7. **Shared memory:** If there are several processes to be executed at a time then all the processes share the same memory space. It should be managed in a specific way so that collision does not happen. 8. **Disk access:** Disk management is the key to computer design. There are several issues with disk access. It may be possible that the system does not support multiple disk access. 9. **Better performance:** It is always an issue. A designer always tries to simplify the system for better performance in reducing power and less cost. 10. **Performance:** One of the biggest challenges in computer design is optimizing performance. Designers need to balance factors such as processing power, memory	**Self-made (NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	**-**	**2**

	capacity, and input/output speed to create a system that is fast and efficient. 11. **Power consumption:** As computing devices become more ubiquitous, power consumption has become a critical design consideration. Designers need to create systems that are energy-efficient to reduce the impact on the environment and improve battery life. 12. **Security:** With the growing amount of sensitive data being stored and processed on computing devices, security is a major issue. Designers need to build in strong encryption and authentication measures to prevent unauthorized access and data breaches. 13. **Compatibility:** As computing devices become more diverse, ensuring compatibility across platforms and devices is a key challenge. Designers need to create systems that can run seamlessly on a variety of operating systems and hardware configurations. 14. **User experience:** The user experience is a critical consideration in computer design. Designers need to create intuitive interfaces and experiences that are easy to use and navigate. 15. **Reliability:** Computing devices are expected to work reliably and consistently. Designers need to create systems that are resilient and can operate without failure for extended periods of time. **(any two)**				
Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)					
Q. 16	The Five Phases of Design Thinking are: **Empathize, Define, Ideate, Prototype and Test.** **Phase 1: Empathize**: Empathy provides the critical starting point for Design Thinking. The first stage of the process is spent getting to know the user and understanding their wants, needs and objectives. This means observing and engaging with people in order to understand them on a psychological and emotional level. During this phase, the designer seeks to set aside their assumptions and gather real insights about the user. **Phase 2: Define**: The second stage in the Design Thinking process is dedicated to defining the problem. You will gather all of your findings from the empathize phase and start to make sense of them: what difficulties and	**CBSE Study Material**	Unit-1	14	**4**

	barriers are your users coming up against? What patterns do you observe? What is the big user problem that your team needs to solve? By the end of the define phase, you will have a clear problem statement. The key here is to frame the problem in a user-centered way; rather than saying —We need to, frame it in terms of your user: —Retirees in the Bay area need. Once you have formulated the problem into words, you can start to come up with solutions and ideas — which brings us onto stage three. **Phase 3: Ideate:** with a solid understanding of your users and a clear problem statement in mind, it's time to start working on potential solutions. The third phase in the Design Thinking process is where the creativity happens, and it's crucial to point out that the ideation stage is a judgement-free zone! Designers will hold ideation sessions in order to come up with as many new angles and ideas as possible. There are many different types of ideation technique that designers might use, from brainstorming and mind mapping to body storming (role-play scenarios) and provocation — an extreme lateral-thinking technique that gets the designer to challenge established beliefs and explore new options and 15 alternatives. Towards the end of the ideation phase, you will narrow it down to a few ideas with which to move forward. You can learn about all the most important ideation techniques here. **Phase 4: Prototype:** The fourth step in the Design Thinking process is all about experimentation and turning ideas into tangible products. A prototype is basically a scaled-down version of the product which incorporates the potential solutions identified in the previous stages. This step is key in putting each solution to the test and highlighting any constraints and flaws. Throughout the prototype stage, the proposed solutions may be accepted, improved, redesigned or rejected depending on how they fare in prototype form. You can read all about the prototyping stage of Design Thinking in this in-depth guide. **Phase 5:** Test After prototyping comes user testing, but it's important to note that this is				

	rarely the end of the Design Thinking process. In reality, the results of the testing phase will often lead you back to a previous step, providing the insights you need to redefine the original problem statement or to come up with new ideas you had not thought of before.				
Q. 17	Risk matrices are probably the inter-industry safety standard as the primary tool used in risk evaluation. **Risk matrices are simplistic charts that use —** 1. Probability and 2. Severity to quantify the risk priority of a real or hypothetical safety scenario. The quantification is generally broken into 3 categories: • Acceptable risk (green); • Unacceptable risk (red); and • Acceptable with mitigation, meaning risk may not yet be as low as reasonably possible (yellow). Some organizations use 1 or 2 additional colors, such as light green and/or orange, though these colours only provide further —aesthetic and risk granularity rather than general quantification. Risk matrices are ultimately used as risk management tools to rank risks with the risk grid and the calculated risk indices.  The risk matrix is broken into a grid. The grid is usually 5x5, though it can be larger or smaller depending on company needs. The grid is used to assign a calculated —number to the risk, which is combination of Probability x Severity, and represents the risk priority. **The risk matrix grid:** - Usually increases in severity from left (low) to right (high);	**CBSE Study Material**	Unit-3	137	**4**

	- Usually increases in probability from bottom (low) to top (high); but - A risk matrix can move in any direction, so this matrix grid move from right to left and top to bottom, right to left and bottom to top, or left to right and top to bottom.				
Q. 18	**Stage 1** – **furniture design**. Before producers start producing furniture, they must be designed. Designers have many ideas for furniture in various styles. In recent years, apart from the appearance of furniture, great importance is attached to its functionality. The approved project is sent to the production hall, where the next stages of furniture creation follow. **Stage 2** – **Selection of materials for the production of furniture.** The furniture production process begins with the preparation of the right material. The most common materials from which furniture is made are wood and wood-like products. Manufacturers of solid wood furniture must first select a tree species. Pine is the most commonly used tree species for furniture production. The furniture is made of oak, beech and ash wood, as well as ebony or cherry. **Stage 3** – **Shearing and transport.** In the next stage, the trees of selected species are cut out. These works are carried out by qualified woodcutters using specialized equipment. Then the wood is transported to the sawmill. At this point, the wood is cut into boards and transported to the dryer. **Stage 4** – **Drying.** The process of drying wood is extremely important, because it has a big impact on the quality of manufactured furniture. In a situation where the wood is very dry, it dries in the apartment as a finished piece of furniture. Then the deformation process takes place. The standard adopted for the production of furniture is humidity reduced to 8-10%. The use of this standard significantly affects the quality of furniture. **Stage 5** – **Execution of individual pieces of furniture.** The next stage in creating furniture is to make all the elements of a particular piece of furniture in accordance with the design. Machines are used during this process, so it takes relatively quickly. The use of the latest technology and good quality equipment means	**CBSE Study Material**	Unit-2	89	**4**

	that every piece of furniture is precise. The accuracy and precision of the individual elements is very important, because it affects the quality of furniture and makes it easier to adjust when assembling furniture. **Stage 6** – **Grinding.** Each cut part after the finished stage goes to the appropriate departments. It's polished there. Thanks to this, the furniture is smooth and has no shards. **Stage 7** – **Painting and varnishing.** The next stage of furniture production is giving it a final look. To give the wood shine and make it resistant to water, each piece of furniture overlaps with the preservative layer. It can be varnish, stain or wax. Then the elements are polished. **Stage 8** – **Packaging and transporting** items to the store. Finished furniture elements are packed and prepared for transport. Each package contains all the elements necessary to assemble furniture. The finished packages are transported to the store where you can buy them. Thanks to the fact that the furniture is spread, it is easier to carry. **Stage 9** – **Assembly of furniture.** After purchase and delivery to the apartment, please send it. The packaging in which the furniture is located is accompanied by instructions. According to the recommendations, we will assemble the elements in the purchased furniture.				
Q. 19	Various tools used in In-Design software are: - **1. DIRECT SELECTION TOOL**  Also like Photoshop, the Direct Selection Tool only selects one anchor point on an object. So, if you wanted to move one specific anchor point, you'd use this tool. **2. PAGE TOOL**  The Page Tool allows you to select an entire page and rearrange it or resize it on your work space.	**Self-made (NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	**-**	**4**

3. GAP TOOL

The Gap Tool is used when you want to change the distribution of two objects while keeping the white space between them the same. Click on the gap between two objects and drag. One object will get bigger while the other gets smaller.

4. CONTENT COLLECTOR TOOL

The Content Collector Tool allows you to collect multiple pieces of content that you want to place either in the same document or in another InDesign document.

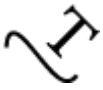
5. CONTENT PLACER TOOL

Once you've collected your objects with the Content Collector Tool, you'll use the Content Placer Tool to place those objects either in the same document or in a different InDesign document.

6. TYPE TOOL

This is your basic type tool. Click and drag to create a rectangular text box and type away!

7. TYPE ON A PATH TOOL



The Type on a Path Tool, on the other hand, types around an object. You'd use this on an object you've already created.

8. LINE TOOL

	This tool creates a line. Hold shift while you click and drag to keep it straight horizontal, vertical, or at a 45-degree angle. **9. PEN TOOL**  The Pen Tool is my favorite, but by far one of the hardest tools to master. You draw by clicking on the point where you want to start, and before unclicking, hold and drag the cursor to make a curve. Then you click on the next point where you'd like to continue your shape, hold and drag the cursor, etc. **(any four)**				
Q. 20	Sustainable design is the approach to creating products that have considered the environmental, social, and economic impacts from the initial phase through to the end of life. Some sustainable design principles for products are – • Use non-toxic, sustainably produced, or recycled materials which have a lower environmental impact than traditional materials. • Use manufacturing processes which are more energy efficient than traditional processes. • Build longer-lasting and better-functioning products which will have to be replaced less frequently. • Design products for reuse and recycling. Easy to disassemble so that the parts can be reused to make new products. • Materials should come from nearby, sustainably managed renewable sources that can be composted when their usefulness is exhausted.	**Self-made (NOTE: - As NCERT and CBSE Study Material of chapter-4 are not available.)**	Unit-4	**-**	**4**