



CBSE Class X Design Thinking and Innovation Set 4 (109)

Time Allowed :2 Hours	Maximum Marks :50	Total Questions :22
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General Instructions

1. Please read the instructions carefully.
2. This Question paper consists of 22 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 ($5 + 17 = 22$) 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):**
 - (a) This section has 05 questions.
 - (b) There is no negative marking.
 - (c) Do as per the instructions given.
 - (d) Marks allotted are mentioned against each question/part.
7. **Section B – Subjective type questions (26 marks):**
 - (a) This section has 17 questions.
 - (b) A candidate has to do 10 questions.
 - (c) Do as per the instructions given.
 - (d) marks allotted are mentioned against each question/ part.

Section A

1. Answer any 4 out of the given 6 questions on employability skills.

(i) Beard or moustache is considered a sign of masculinity in India, but it is frowned upon in other countries as they think it indicates low beauty standards. This can be considered as:

- (a) Physical Barrier.
- (b) Cultural Barrier.
- (c) Linguistic Barrier.
- (d) Interpersonal Barrier.

Solution: (b) Cultural Barrier

Explanation: Cultural norms and values vary significantly across regions. In this case, beard or moustache signifies masculinity in India but is perceived differently elsewhere due to cultural differences.

Quick Tip
Cultural barriers arise due to differing traditions, values, and beliefs between individuals or groups.

(ii) Stealing of your personal information from your computer, without your knowledge, is known as:

- (a) Threats.
- (b) Breach.
- (c) Privacy.
- (d) Stealing.

Solution: (b) Breach

Explanation: A breach occurs when unauthorized access to personal or sensitive data is obtained without consent.



Quick Tip

To prevent breaches, use strong passwords and enable firewalls or antivirus software on your devices.

(iii) Neha is a student of class X who loves to dance but does not take any professional tuition to learn dancing. One day while returning home from school, she saw an open-air dance competition being held at the roadside. She participated out of interest and eventually secured her place in the top five among the participants and got rewarded as well. This motivated her greatly and she enrolled herself into a dance class. Now she thinks to take dancing as her career.

The above example signifies which type of motivation?

- (a) Internal.
- (b) External.
- (c) Forcive.
- (d) Both (A) and (B).

Solution: (d) Both (a) and (b)

Explanation: Neha's intrinsic interest in dancing and external rewards like recognition and prizes both played a role in motivating her.

Quick Tip

Motivation can stem from both internal drives and external stimuli such as rewards or recognition.

(iv) Which Sustainable Development Goal (SDG) focuses on promoting inclusive and sustainable economic growth by enhancing opportunities for decent work and empowering individuals through the acquisition of green skills?

- (a) SDG 4: Quality Education.
- (b) SDG 8: Decent Work and Economic Growth.
- (c) SDG 13: Climate Action.



(d) SDG 12: Responsible Consumption and Production.

Solution: (b) SDG 8: Decent work and Economic Growth

Explanation: SDG 8 aims to achieve sustainable economic growth by fostering decent work opportunities and empowering individuals through skills development.

Quick Tip

Green skills refer to knowledge and abilities that support environmental sustainability while boosting economic growth.

(v) Sanat, a student of Class X, has made plans to become an English teacher. After passing his class X examination, he has to pass class XII. After that, he needs to Graduate and do his Masters as well as his Doctoral thesis and B.Ed. He has already chosen the institution where he will pursue his academic goals for the next 10-12 years. What does this goal signify?

(a) Specific, Measurable, Achievable, Relevant, Time-bound.

(b) Specific, Modest, Achievable, Relevant, Time-bound.

(c) Specific, Measurable, Active, Relevant, Time-bound.

(d) Specific, Measurable, Achievable, Relevant, Time-flexible.

Solution: (a) Specific, Measurable, Achievable, Relevant, Time-bound

Explanation: Sanat's goal is clearly defined with specific objectives, measurable steps, and a realistic timeline, fulfilling the SMART criteria.

Quick Tip

Setting SMART goals ensures clarity and focus, aiding in efficient progress tracking.

(vi) Priya tends to avoid risk and prefers stability in decision-making processes.

Rahul demonstrates a fixed mindset, often resisting change or new approaches.

Kavita showcases adaptability, readily embracing changes and new ideas.

Arjun is risk-averse and avoids any initiatives that might challenge the status quo.



Among above individuals, whose approach aligns more with the qualities typically associated with a successful entrepreneur?

- (a) Priya.
- (b) Rahul.
- (c) Kavita.
- (d) Arjun.

Solution: (c) Kavita

Explanation: Successful entrepreneurs are adaptive, open to new ideas, and willing to embrace changes. Kavita's qualities align with these traits.

Quick Tip

Entrepreneurial success often requires adaptability, innovation, and the willingness to embrace calculated risks.

2. Answer any 5 out of given 6 questions.

(i) Which of the following is another name for Flipbook Animation?

- (a) Pixilation.
- (b) Squash and Stretch.
- (c) Straight Ahead Animation.
- (d) Stop Motion Animation.

Solution: (d) Stop Motion Animation

Explanation: Flipbook animation involves creating sequential images that simulate motion when flipped rapidly, a concept similar to stop motion animation.

Quick Tip

Stop Motion Animation is widely used in claymation and traditional animation techniques to create motion.

(ii) Pop-up cards typically have sections that lift, fold, or “pop up” to create various shapes, scenes, or designs, adding an interactive and visually appealing aspect to the



traditional card. They are commonly used for special occasions like birthdays, holidays, or as unique ways to convey messages. A pop-up card is an example of:

- (a) Scenario as Prototype.
- (b) Animatics as Prototype.
- (c) Paper Prototype.
- (d) 3D Form Prototype.

Solution: (c) Paper Prototype

Explanation: Pop-up cards are constructed using paper and are designed as a prototype for interactive and visually appealing communication tools.

Quick Tip

Paper prototypes are often used in early design stages to visualize and test ideas quickly.

(iii) Chronology, in a story, is a part of which structure?

- (a) Narrative.
- (b) Beginning.
- (c) Parallel.
- (d) Climax.

Solution: (a) Narrative

Explanation: Chronology refers to the arrangement of events in their order of occurrence, which is a key component of a narrative structure.

Quick Tip

Narratives with a clear chronological flow are easier for audiences to follow and understand.

(iv) Choose the most appropriate & correct one among the four sets of “7C’s of effective communication”:

- (a) Clarity – Correctness – Conciseness – Courtesy – Concreteness – Consideration –



Completeness.

(b) Clarity – Correctness – Conciseness – Courtesy – Cleanliness – Consideration – Competence.

(c) Clarity – Correctness – Conciseness – Creativity – Concreteness – Consideration – Competence.

(d) Clarity – Correctness – Conciseness – Courtesy – Concreteness – Consideration – Cooperation.

Solution: (a) Clarity – Correctness – Conciseness – Courtesy – Concreteness – Consideration – Completeness

Explanation: The 7C's ensure effective communication by focusing on delivering clear, concise, and courteous messages.

Quick Tip

Practicing the 7C's in communication improves understanding and reduces potential misinterpretation.

(v) **What distinguishes creative doodling from traditional sketching?**

(a) Precise lines and shapes.

(b) Detailed shading and colouring.

(c) Structural and planned approach.

(d) Free-flowing and spontaneous expression.

Solution: (d) Free-flowing and spontaneous expression

Explanation: Creative doodling is characterized by its freeform and spontaneous nature, unlike the structured approach of traditional sketching.

Quick Tip

Doodling is a great way to boost creativity and visualize thoughts in a non-restrictive manner.

(vi) **Your mother cooked dal for the lunch. By the end of the evening, still a lot of dal**



was left out. So she decided to make dal-poori for dinner, reusing the same dal from the lunch. This is an example of:

- (a) Sustainable Forestry.
- (b) Sustainable Agriculture.
- (c) Zero Waste.
- (d) Water Management.

Solution: (c) Zero Waste

Explanation: Reusing leftover dal to prepare another meal exemplifies zero waste by minimizing food waste and making efficient use of resources.

Quick Tip

Adopting zero waste practices at home reduces environmental impact and promotes sustainability.

3. Answer any 5 out of given 6 questions.

5 × 1 = 5

(i) SCAMPER stands for:

- (a) Substitute, Combine, Adapt, Modify, Put to another use, Estimate and Reason.
- (b) Substitute, Combine, Act, Modify, Put to another use, Estimate and Reason.
- (c) Substitute, Combine, Adapt, Modify, Put to another use, Elaborate and Reason.
- (d) Substitute, Combine, Adapt, Moral, Put to another use, Estimate and Reason.

Solution: (a) Substitute, Combine, Adapt, Modify, Put to another use, Estimate and Reason

Explanation: SCAMPER is a brainstorming method used for creative problem-solving and idea generation.

Quick Tip

Use SCAMPER to think innovatively and improve existing products or solutions.

(ii) Which of the following scenario represents an example of sustainable product redesign?

- (a) Adding more plastic packaging layers to a product to enhance its durability.



- (b) Introducing a new product version with extra features without considering environmental impact.
- (c) Redesigning a smartphone to use recycled materials and be more easily repairable.
- (d) Continuing the use of non-recyclable materials in product manufacturing despite environmental concerns.

Solution: (c) Redesigning a smartphone to use recycled materials and be more easily repairable

Explanation: Sustainable product redesign focuses on reducing environmental impact by using eco-friendly materials and enhancing repairability.

Quick Tip

Sustainable design ensures long-term usability while protecting the environment.

(iii) ____ is not an effective way to improve verbal communication skills.

- (a) Active listening.
- (b) Speaking clearly and concisely.
- (c) Asking for clarification.
- (d) Asking questions in the middle of conversation.

Solution: (d) Asking questions in the middle of conversation

Explanation: Interrupting a conversation can disrupt the flow and may appear rude, impacting effective communication.

Quick Tip

Practice active listening and wait for appropriate pauses to ask questions.

(iv) In the epic of Mahabharata, a character named Shakuni played the role of:

- (a) Protagonist.
- (b) Antagonist.
- (c) Confidante.
- (d) Affection (Affectionate).



Solution: (b) Antagonist

Explanation: Shakuni is portrayed as a manipulative and cunning character who acts against the protagonists of Mahabharata.

Quick Tip

Understanding character roles helps in analyzing literary works more effectively.

(v) Your school is making a documentary about the features and benefits of its curriculum for marketing purpose. Which amongst the following option will you suggest to use to create title graphics of the documentary?

- (a) Pixelation.
- (b) Motion Graphics.
- (c) Cutout Animation.
- (d) Character Design.

Solution: (b) Motion Graphics

Explanation: Motion graphics effectively create visually appealing title graphics for documentaries, enhancing engagement.

Quick Tip

Use motion graphics for dynamic and attention-grabbing visual storytelling.

(vi) Choose the correct stage of the design process usually involving the creation and utilization of animatics:

- (a) Ideation.
- (b) Prototyping.
- (c) Evaluation.
- (d) Implementation.

Solution: (b) Prototyping

Explanation: Animatics are often used during prototyping to visualize sequences and refine design concepts.



Quick Tip

Prototyping bridges the gap between ideas and final implementation, ensuring better outcomes.

4. Answer any 5 out of given 6 questions.

5 × 1 = 5

(i) Cultivation of crops as well as rearing of animals was done in the period 5000 to 3000 years ago. Identify the time period.

- (a) Hunter-gatherer.
- (b) Gupta Dynasty.
- (c) Industrial Age.
- (d) Indus Valley Civilization.

Solution: (d) Indus Valley Civilization

Explanation: The Indus Valley Civilization marked advancements in agriculture and animal rearing, becoming one of the earliest examples of organized human settlements.

Quick Tip

Study historical milestones like the Indus Valley for understanding early human development.

(ii) Which of the following best describes the concept of creative art exchange in fostering creativity?

- (a) It refers to the collaboration and sharing of artistic ideas, techniques, and experiences among artists from diverse backgrounds.
- (b) It emphasizes competition among artists to create innovative works that stand out from others in the field.
- (c) It highlights the individualistic approach to art creation, disregarding external influences or collaborations.
- (d) It focuses on commercializing artworks through auctions and sales, promoting financial gain over artistic expression.



Solution: (a) It refers to the collaboration and sharing of artistic ideas, techniques, and experiences among artists from diverse backgrounds.

Explanation: Creative art exchange fosters innovation through collaboration, enhancing artistic diversity and creativity.

Quick Tip

Participate in collaborative platforms to expand your creative horizons.

(iii) Shaking Hands, Bowing, Namaste – these are different forms of which type of communication?

(a) Gestural.

(b) Verbal.

(c) Visual.

(d) Fundamental.

Solution: (a) Gestural

Explanation: Gestural communication involves body movements, such as shaking hands or bowing, to convey messages non-verbally.

Quick Tip

Non-verbal cues like gestures enhance communication effectiveness in diverse cultural contexts.

(iv) Assertion (A): Narrative structure of a story is how the plot is revealed to the reader.

Reason (R): This is done to maintain the interest of the reader. (a) Both Assertion (A) and Reason (R) are correct but Reason (R) is not the correct explanation of Assertion (A).

(b) Assertion (A) is correct, but Reason (R) is incorrect.

(c) Assertion (A) is incorrect, but Reason (R) is correct.

(d) Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).



Solution: (d) Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).

Explanation: The narrative structure ensures that the story engages the reader by maintaining their interest through plot development.

Quick Tip

Plan your narrative structure to ensure reader engagement and coherence in story-telling.

(v) Amongst the following options, which according to you is the one best option to identify the primary purpose of character design in story-telling? (a) Enhance background visuals.

(b) Create emotional connections with the audience.

(c) Depict complex landscape.

(d) Explore typography in narrative.

Solution: (b) Create emotional connections with the audience

Explanation: Effective character design builds an emotional connection with the audience, making the story more relatable and engaging.

Quick Tip

Focus on designing characters that resonate with the audience for impactful story-telling.

(vi) What distinguishes a scenario from other design prototypes?

(a) They are limited to specific user groups.

(b) They involve step-by-step narrative of a user's experience.

(c) They do not consider user feedback.

(d) They are used only in early design phases.

Solution: (b) They involve step-by-step narrative of a user's experience

Explanation: Scenarios describe how users interact with a system or product, providing



detailed narratives to understand user needs.

Quick Tip

Use scenarios to visualize and analyze user interactions effectively.

5. Answer any 5 out of given 6 questions.

5 × 1 = 5

(i) Bouncing ball is an example of:

- (a) Squash and stretch
- (b) Timing and spacing
- (c) Stop Motion Animation
- (d) Claymation

Solution: (a) Squash and stretch

Explanation: Squash and stretch illustrate the elasticity of an object, making animations more realistic, especially in bouncing objects.

Quick Tip

Master squash and stretch principles for lifelike animations in motion graphics.

(ii) Clay in 3D prototyping visualizes which of the following design aspects compared to cardboard?

- (a) Economical Manufacturing
- (b) Quick Iterative Testing
- (c) Structural Stability
- (d) Surface Finish

Solution: (d) Surface Finish

Explanation: Clay provides smoother surfaces, aiding in visualizing finer details compared to cardboard.

Quick Tip

Experiment with clay models to refine designs in 3D prototyping.



(iii) Which of these can be reused and recycled?

- (a) Cutting old clothes into cleaning rags rather than purchasing new ones from the store.
- (b) Using wrapping papers for attractive gift packing.
- (c) Using plastic bottles to refill water.
- (d) Using aluminum cans.

Solution: (a) Cutting old clothes into cleaning rags rather than purchasing new ones from the store.

Explanation: Reusing old clothes as cleaning rags reduces waste and promotes sustainability.

Quick Tip
Practice upcycling to reduce waste and create functional products.

(iv) Which of the following is not a type of creativity?

- (a) Deliberate Cognitive Creativity
- (b) Deliberate Emotional Creativity
- (c) Spontaneous Cognitive Creativity
- (d) Deliberate Spontaneous Creativity

Solution: (d) Deliberate Spontaneous Creativity

Explanation: Creativity can either be deliberate or spontaneous, but deliberate spontaneity is contradictory and not a defined type.

Quick Tip
Understand different creativity types to enhance problem-solving approaches.

(v) In ____ case, the author tells the story out of chronological order, jumping abruptly through the timeline.

- (a) Chronological
- (b) Fractal



(c) Parallel

(d) Circular

Solution: (b) Fractal

Explanation: Fractal storytelling involves non-linear timelines, often used in modern narratives for dramatic effect.

Quick Tip

Experiment with fractal storytelling to make narratives unique and engaging.

(vi) Plagiarism is:

(a) Using someone else's ideas, words, or work without proper acknowledgment.

(b) Rewriting someone else's work with minor modifications.

(c) Quoting someone's work with permission but without citation.

(d) Using your own ideas and claiming them as original.

Solution: (a) Using someone else's ideas, words, or work without proper acknowledgment.

Explanation: Plagiarism is unethical and involves using someone else's intellectual property without giving them due credit.

Quick Tip

Always credit original sources to maintain academic integrity.

Section B

Answer any 3 out of the given 5 questions on Employability Skills.

Answer each question in 20-30 words:

6. Identify and briefly describe one primary challenge hindering global sustainable development efforts.

Solution: One major challenge hindering global sustainable development is **climate change**.

Explanation: Climate change impacts natural resources, biodiversity, and ecosystems,



increasing extreme weather events and threatening livelihoods. Mitigating climate change requires international cooperation and significant investments in green technology.

Quick Tip

Addressing climate change is crucial to achieving the Sustainable Development Goals (SDGs).

7. “Entrepreneurs of India” is a Reality TV show where budding entrepreneurs pitch their business models to a panel of investors to convince them to invest money in their ideas. Suppose you are an entrepreneur with an idea of a community-based agricultural cooperative that offers modern farming equipment, techniques, tools, and knowledge to small-scale local farmers. Write your pitch, in not more than three points, that you think will capture the essence of your idea.

Solution:

1. Empower small-scale farmers by providing access to advanced farming equipment and techniques, improving crop yields and incomes.
2. Establish a cooperative model to facilitate shared resources and knowledge, fostering a sense of community and economic empowerment.
3. Promote sustainable farming practices to enhance productivity while conserving resources and protecting the environment.

Quick Tip

Keep your pitch concise and focus on the social and economic impact of your idea to attract investors.

8. What are the measures that we can follow to protect our data from theft & viruses?

Solution:

1. Use strong and unique passwords for all accounts and change them regularly.



2. Install and regularly update antivirus software to safeguard against malware and viruses.
3. Avoid opening suspicious emails or downloading files from untrusted sources.
4. Backup data regularly on secure platforms or devices.

Quick Tip

Implement multi-factor authentication (MFA) for enhanced data security.

9. Identify the abilities that are required to find weakness.

Solution:

1. Analytical Thinking: Assess situations critically to identify potential vulnerabilities.
2. Observation Skills: Pay close attention to patterns and behaviors to uncover flaws.
3. Open-mindedness: Accept constructive feedback and use it to identify improvement areas.
4. Problem-solving Ability: Strategically approach weaknesses to develop actionable solutions.

Quick Tip

Cultivate self-awareness to recognize and address personal or organizational weaknesses effectively.
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10. List the common mistakes that are made during non-verbal communication.

Solution:

1. Lack of eye contact, which may indicate disinterest or dishonesty.
2. Poor posture, giving an impression of low confidence or disengagement.
3. Inconsistent facial expressions that contradict verbal communication.
4. Overuse of gestures, leading to misinterpretation or distraction.



Quick Tip

Be mindful of your body language and ensure it aligns with your verbal message.

Answer any 4 out of the given 6 questions in 20-30 words each.

11. Write any four sustainable strategies and technologies.

Solution:

1. **Renewable Energy:** Use of solar, wind, and hydroelectric power to reduce dependency on fossil fuels.
2. **Water Conservation:** Techniques like rainwater harvesting and efficient irrigation systems.
3. **Waste Management:** Recycling and composting to minimize landfill waste.
4. **Green Building Design:** Eco-friendly construction materials and energy-efficient designs.

Quick Tip

Adopting sustainable strategies ensures environmental preservation for future generations.

12. "Bright and warm colours make most people feel happy and optimistic, whereas dull and dark colours might make you feel gloomy". What is your opinion and why?

Solution: Bright and warm colours like yellow and orange evoke positivity and energy as they resemble sunlight and warmth. On the contrary, dark colours like black or grey might create a dull or somber mood due to their association with darkness or sadness.

Quick Tip

Colours can significantly influence mood and emotions; use them wisely in design and decor.



13. Your Social Science teacher has given you an idea for your class project, “Usage of Drainage System in your locality”. State the steps that you will have to go through to present your project.

Solution:

1. Identify drainage issues in the locality through surveys and observations.
2. Collect data on drainage systems, such as maps and photographs.
3. Analyze the impact of poor drainage on health, hygiene, and infrastructure.
4. Propose solutions like better maintenance, awareness campaigns, or upgrades.
5. Create a detailed report with visuals to present findings effectively.

Quick Tip

Ensure community participation in identifying and addressing drainage issues for sustainable solutions.

14. A story consists of mainly four characteristics. Explain these four characteristics that a story might need.

Solution:

1. **Plot:** The sequence of events that form the structure of the story.
2. **Characters:** The individuals or entities who drive the story forward.
3. **Setting:** The time and place where the story occurs, providing context.
4. **Theme:** The central idea or message conveyed through the story.

Quick Tip

A well-developed plot, engaging characters, a vivid setting, and a meaningful theme make a story impactful.

15. ”Animatics is very much like the scenario prototyping”. Do you agree with this statement? Explain your reasons.



Solution: Yes, animatics and scenario prototyping are similar as both involve visualizing ideas before the final product. Animatics use animated sketches to plan scenes in media, while scenario prototyping models user interactions to refine concepts.

Quick Tip

Both methods help identify flaws early, ensuring better outcomes in design or storytelling.

16. Explain how “timing” plays a critical role in establishing a character’s nature, personality, mood, and emotion.

Solution: Timing determines how events unfold and impact the perception of a character. Precise timing in dialogue or actions conveys urgency, humor, or tension, highlighting the character’s traits and emotions effectively.

Quick Tip

Mastering timing enhances storytelling by making characters more relatable and their emotions vivid.

Answer any 3 out of the given below 6 questions in 50-80 words.

17. Every story has mainly three parts. Write a story, in your own words just like a greedy farmer and his golden goose, mainly in these three parts.

Solution:

1. **Introduction:** A poor farmer owns a magical goose that lays a golden egg daily.
2. **Conflict:** Driven by greed, he decides to kill the goose to get all the eggs at once.
3. **Conclusion:** The farmer finds no eggs inside, losing the magical goose and his fortune.

Quick Tip

Divide your story into clear segments to maintain flow and clarity for the audience.



18. You have been given an assignment to deliver a presentation in front of the whole class. What are the key communication skills that you should maintain and why?

Solution:

1. Maintain **eye contact** to engage the audience.
2. Use a **clear and confident tone** to convey ideas effectively.
3. Practice **active listening** for responding to queries.
4. Use **visual aids** to enhance understanding and maintain interest.

Quick Tip
Effective communication builds audience trust and ensures the message is conveyed accurately.

19. As of year 2016, 1.77 million people were homeless in India while there were many people with more than one house. In order to accommodate so many homeless people, government had taken initiative to help them. To construct buildings, a large area of forests land and big trees was required to be cleared. In this way, deforestation has become a burning issue in India. As a design thinker, how will you devise a solution to this problem?

Solution:

1. Promote **vertical housing** to minimize land usage.
2. Encourage use of **recycled materials** for eco-friendly construction.
3. Implement **urban greening projects** alongside housing initiatives.
4. Advocate **community-sharing programs** to utilize underused houses.

Quick Tip
Sustainable housing balances development with environmental conservation.



20. Annual Music Festival is organized in your school. You want to showcase something unique and sustainable. So you thought of using everyday items as music instruments. Briefly outline how you are going to conduct this festival, listing the kinds of items and materials you might need for this.

Solution:

- **Plan:** Organize the festival with student performances using homemade instruments.
- **Materials:** Use bottles as shakers, cans as drums, and rubber bands for string sounds.
- **Execution:** Conduct workshops for creating instruments and highlight sustainability.
- **Message:** Promote recycling and creative reuse of materials for art.

Quick Tip
Sustainable initiatives in art promote awareness and inspire innovative thinking.

21. "Hero" video is a prominent and engaging video placed at the top of a website. It's designed to capture visitor's attention immediately, typically showcasing key messages, products, or brand stories in a visually appealing and impactful way."Hero" company's videos are used to create a strong first impression and encourage users to explore further content on the site.

Vidico is a video production company. They incorporate Motion Graphics in the form of animated text, image and other elements to create stunning videos for other companies for promotional purpose. They took the task of creating and producing a "Hero" video for another software company, Easy Agile, in consequence "Hero" video reached four times the industry average Click-Through-Rate (CTR) on its website. It eventually won a Gold Award in the year 2022 for the Motion Graphics Category. Briefly explain about the type of animation medium represented by the "Hero" video. What in your opinion, resulted in such a remarkable impact of the video?

Solution: The "Hero" video uses a combination of animation mediums to make it visually



striking and engaging:

- **Motion Graphics:** Animated text, icons, and transitions are used to highlight key messages in a dynamic and attention-grabbing way.
- **Live-Action Integration:** Real-world video footage is combined with overlays, infographics, and animations to enhance storytelling and make the video more relatable.
- **3D Animation:** High-quality 3D visuals and effects are used to add depth, realism, and a sense of luxury, especially when showcasing products or concepts.
- **Kinetic Typography:** Moving text or dynamic font styles emphasize the most important words and engage viewers visually.
- **Cinematic Visuals:** Combining video clips, close-ups, and slow-motion effects creates a dramatic impact that appeals emotionally to the audience.

Factors Contributing to the Impact of the Hero Video:

1. **Strategic Placement:** Placing the Hero video at the top of the website ensures it is the first element visitors see, maximizing engagement.
2. **Visual Appeal:** High-quality graphics, vibrant colors, and smooth animations capture attention immediately.
3. **Concise Storytelling:** The video conveys the core message or brand story within a short time frame, maintaining interest.
4. **Emotional Connection:** Music, sound effects, and visuals work together to evoke emotions and make the video memorable.
5. **Call-to-Action (CTA):** Many Hero videos end with a clear CTA, encouraging users to take specific actions (e.g., "Learn More," "Buy Now").
6. **Dynamic Content:** The use of transitions, text animations, and overlays makes the video visually engaging and interactive.

Why it Works: The "Hero" video creates an immediate impact by delivering a visually appealing and emotionally resonant message. By combining animation techniques, concise storytelling, and strategic design, it captures attention, builds trust, and drives actions effectively.



Quick Tip

To make a Hero video impactful, combine motion graphics, clear messaging, and emotional storytelling with high-quality visuals and a strong call-to-action.

22. An Atal Tinkering Lab (ATL) provides activity-based learning in the identified school across the country where young minds can give shape to their ideas for societal problems. Students can tinker with the equipments found in such facilities to learn classroom concepts in a better and effective way. Government of India has plans to install ATL's across all school, both government and private, within 2030.

One very popular instrument in the ATL is the 3D printer. A 3D printer is a type of machine that creates three dimensional objects by depositing material layer by layer based on a digital model or design. These printers use various materials such as plastic filaments, resin, metal powders, or other materials, depending on the technology and the desired output.

Explain in your own words, how using such a 3D printer can be beneficial to an educational institution, from a design, innovation, and thinking perspective.

Solution:

3D printers in an Atal Tinkering Lab (ATL) provide immense benefits to educational institutions from various perspectives:

1. Design Perspective:

- Students can visualize and create physical prototypes of their ideas, improving their spatial and design-thinking skills.
- It allows students to design complex structures, such as models of buildings, mechanical systems, or scientific diagrams.
- Encourages learning of Computer-Aided Design (CAD) tools, fostering technical skills.

2. Innovation Perspective:

- 3D printing allows young innovators to quickly prototype and test their ideas, reducing development time.



- Promotes experimentation by enabling cost-effective creation of models for societal solutions, such as prosthetics or sustainable products.
- Drives creativity by giving students the freedom to iterate on their ideas.

3. Thinking Perspective:

- Enhances problem-solving abilities by converting abstract ideas into tangible outcomes.
- Encourages critical thinking, as students analyze design flaws and improve their models iteratively.
- Develops logical thinking and teamwork through collaborative projects involving 3D printing.

Overall Impact: Using 3D printers in an ATL enhances hands-on learning, bridges the gap between theory and practice, and equips students with skills in design, innovation, and critical thinking that are essential for solving real-world problems.

Quick Tip

3D printing fosters creativity, hands-on skills, and innovation. It enables students to prototype, iterate, and develop solutions for real-world challenges.

