



COMMON PRE-BOARD EXAMINATION
DESIGN THINKING & INNOVATION-Code No. 422



Class-X-(2025-26)

SET: 1

Time allowed: 2 Hrs.

Maximum Marks: 50

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):

- i. This section has 05 questions.
- ii. Marks allotted are mentioned against each question/part.
- iii. There is no negative marking.
- iv. Do as per the instructions given.

7. SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):

- i. This section has 17 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.1	Answer any 4 out of the given 6 questions on Employability Skills	(1×4=4)
i.	A manager is discussing an employee's performance. Which kind of verbal communication is this? (a) Interpersonal Communication (b) Written Communication (c) Small group Communication (d) Public Communication	1
ii.	Which of the following is an effect of negative stress?	1

	(a) Increase in productivity (b) Good mental health (c) Psychosomatic disorders (d) Emotional stability	
iii.	A community initiates a tree-planting campaign to restore local forests, aiming to enhance biodiversity, prevent soil erosion, and provide habitats for wildlife. This initiative also includes educating residents about sustainable land use practices to protect their natural environment. Which SDG can you relate this initiative to? (a) Clean Water and Sanitation (b) Life on Land (c) Affordable and Clean Energy (d) Climate Action	1
iv.	How can an anti-virus protect your device? (a) It can protect it from overheating (b) It can increase its performance (c) It can prevent data from getting corrupted (d) It can back up data	1
v.	To cut the file or folder, which shortcut key will you use on the computer? (a) Ctrl + V (b) Ctrl + X (c) Ctrl + P (d) Ctrl + C	1
vi.	Identify the commercial function to be performed by an entrepreneur. (a) Innovation (b) Controlling (c) Planning (d) Marketing	1

Q.2	Answer any 5 out of the given 6 questions	(1×5=5)
i.	Identify the statement most correctly representing pixilation in animation. (a) A technique where individual pixels are animated to create a digital effect. (b) A stop-motion technique using live actors as frame-by-frame subjects. (c) A method where images are pixilated to obscure details. (d) An effect that blurs motion in traditional animation.	1
ii.	A development team is working on a new smartwatch interface. Before diving into coding, they create a sequence of drawings that represent the different states and transitions of the smart watch's UI. These drawings are then photographed and assembled into a short video that simulates the experience of interacting with the smartwatch. The term uses this video to gather feedback from potential users.	1

	<p>Which low-fidelity prototype technique is being used in this scenario?</p> <p>(a) Paper prototype (b) Scenario as prototype (c) Animatics as prototype (d) 3D form prototype</p>	
iii.	<p>A student is interested in writing a story about how entertainment has evolved over the decades. To gather insights, he decides to interview an older relative. In addition to asking about their modes of entertainment, the student asks about the type of clothing worn during their youth and the kind of transportation available at the time.</p> <p>Which of the following topics would be most relevant to further explore how entertainment has changed over time?</p> <p>(a) The evolution of technology in the household. (b) The types of traditional festivals celebrated. (c) The role of education in personal development. (d) The influence of religious practices on daily life.</p>	1
iv.	<p>Identify the most accurate statement about the cognitive benefits and applications of creative doodling:</p> <p>(a) Creative doodling is most effective when vibrant colours are used throughout the process. (b) Creative doodling is generally inappropriate for a professional environment and settings. (c) To achieve the best results, creative doodling should adhere to strict guidelines and structured patterns. (d) Creative doodling can enhance memory retention and improve focus during learning activities.</p>	1
v.	<p>A practical way to make a household more sustainable is to:</p> <p>(a) Increase the use of non-renewable energy sources. (b) Install energy-efficient appliances and reduce water consumption. (c) Replace reusable items with single-use products for convenience. (d) Maximise waste production to stimulate economic activity.</p>	1
vi.	<p>_____ is not a useful practice for improving visual communication while using software like MS PowerPoint.</p> <p>(a) Utilising colour contrast to enhance readability. (b) Ensuring that visual elements are aligned and balanced. (c) Overloading slides with excessive text. (d) Using simple and clear graphics to convey information.</p>	1

Q.3	Answer any 5 out of the given 6 questions	(1×5=5)
i.	To effectively capture and present the unique atmosphere of behind-the-scenes moments from various events in your school, which animation method is ideal	1

	for creating smooth and realistic animated sequences? (a) Pixilation (b) Stop motion (c) Motion graphics (d) 3D animation	
ii.	During which stage of the design process would you use animatics to visualise the sequence and timing of animations before full production begins? (a) Ideation (b) Evaluation (c) Implementation (d) Prototyping	1
iii.	During the Gupta period, what was a significant feature of food production and consumption? (a) Heavy reliance on hunting and gathering. (b) Development of complex food preservation techniques. (c) Cultivation of cereals and spice cultivation in the south. (d) Extensive use of mechanised food production.	1
iv.	Which type of creativity would be most characteristic of someone who experiences a sudden flash of insight leading to a creative breakthrough in science, similar to Newton’s discovery of gravity? (a) Deliberate cognitive creativity (b) Deliberate emotional creativity (c) Spontaneous cognitive creativity (d) Spontaneous emotional creativity	1
v.	Maya is working on a group project where she uses information from a peer-reviewed journal article. However, she does not cite the article because she believes the ideas were already well-known and do not require attribution. Which of the following best describes the risk Maya is taking by not citing the journal article? (a) Her work may be regarded as original and insightful. (b) She might be accused of plagiarism and lose credibility. (c) Her group members will receive all the credit for the work. (d) She will be praised for being efficient in gathering information.	1
vi.	What is the recommended approach for creating a character based on real-life observation? (a) Copying characters from popular movies. (b) Drawing characters from personal observation, like people at a bus stop or street market. (c) Replicating characters from a textbook exactly as they appear. (d) Using only imagination without any real-life reference.	1

Q.4	Answer any 5 out of the given 6 questions	(1×5=5)
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i.	Which of the following tasks would best help students understand the concept of “Squash and Stretch”? (a) Animating a bouncing ball (b) Creating a pendulum swing animation (c) Designing character's facial expression (d) Drawing still life sketches	1
ii.	A group of students has created a cardboard prototype of a vendor cart for their project. After presenting it to the class, they received feedback suggesting that the design lacks details and that some sections do not fit well. What should the group do to address this feedback? (a) Ignore the feedback and continue with their current design. (b) Discard the current prototype and use clay instead of cardboard. (c) Completely redesign the prototype from scratch. (d) Make adjustments to the cardboard pieces, including fitting them together better and adding colour and sketches for details.	1
iii.	In the context of sustainable design, how can the concept of reusability be applied to packaging? (a) By designing packaging that cannot be reused or recycled. (b) By creating packaging that is only used once before disposal. (c) By redesigning packaging to be easily reusable for other purposes. (d) By using packaging materials that are expensive and nonrecyclable.	1
iv.	Testing and gathering feedback from users is a crucial step in which stage of Design Thinking? (a) Define (b) Ideate (c) Understand (d) Prototype	1
v.	What brought about changes to ways in which food was produced, marketed, and consumed across ages? (a) Indus Valley Civilisation (b) Industrialisation in India (c) Gupta period (d) Hunting practices by early humans	1
vi.	The Lion and the Mouse story is the story of a mouse who is shown mercy by a lion, and the mouse returns this same kindness. The narrative structure of this story is: (a) Chronological (b) Fractured (c) Parallel (d) Chronological and Circular	1

Q.5	Answer any 5 out of the given 6 questions	(1×5=5)
i.	The word Prototype originates from the Greek word <i>prototipos</i> , which means (a) Latest model	1

	(b) First original model (c) Last original model (d) Last model	
ii.	A circular lifecycle is based on the principle of ‘taking from nature and then giving back to it’. Which of the following examples follows a circular lifecycle? i) making compost out of household kitchen waste. ii) making disposable plates out of leaves. iii) using bamboo toothbrushes. iv) using food wrapping paper instead of aluminium foil. (a) only i and ii (b) only ii, iv (c) only i, ii, iii (d) only iii and iv	1
iii.	Ratna Pickles, famous for its mango and lemon pickles, based in Gujarat, is now selling pickled avocado to its local customers in the state. Currently, the avocado is sourced from Mexico and needs constant refrigeration while being transported from one state to the other. This leads to customer complaints due to high pricing and lower shelf life. What could Ratna pickles do to reduce pricing? (a) Reduce manpower at the processing stage by investing in technology. (b) Start growing avocado locally in Gujarat to bring down transportation costs and provide livelihood locally. (c) Outsource the manufacturing to a third-party manufacturer. (d) Improving packaging to low-cost durable packaging to reduce cost.	1
iv.	The following question contains an Assertion followed by a Reason. Read them carefully and select the option that best describes the two statements: ASSERTION: Drinking tea, etc., in ‘kulhad’(clay cups) has multiple benefits. REASONING: This act follows the linear lifecycle model. (a) Both assertion and reason are correct, and the reason is the correct explanation of the assertion. (b) Both assertion and reason are correct, but the reason is not the correct explanation of the assertion. (c) Assertion is correct, but the reason is not correct. (d) Assertion is incorrect, but the reason is correct.	1
v.	Plastic food packaging, which is eventually discarded as waste, is an example of (a) Circular lifecycle (b) Multi-dimensional lifecycle (c) Linear lifecycle (d) Uni-dimensional lifecycle	1
vi.	Innovation occurs in a spontaneous, free-flowing manner, while exploring many possibilities is referred to as: (a) Lateral Thinking	1

	(b) Design Thinking (c) Divergent Thinking (d) Analogical Thinking	
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SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 × 3 = 6 marks).

Answer each question in 20 – 30 words.

Q.6	During a team meeting, Sarah is explaining a complex project idea to her colleagues. She speaks too quickly, uses jargon, and doesn't pause for questions. As a result, her team seems confused, and the project isn't fully understood. What can Sarah do to improve her verbal communication skills?	2
Q.7	“Mahima was an ambitious woman and wanted to achieve something in her professional career. In her struggle and fight against all odds, XYZ eventually succeeded in becoming a brand herself.” (a) Name the kind of entrepreneurial activity. (b) Write any one step that an entrepreneur takes to build an organisation.	2
Q.8	All people look forward to vacations for de-stressing and rejuvenation. State any other two ways by which people can manage stress.	2
Q.9	Mention any two human activities that lead to environmental degradation.	2
Q.10	What is spam in the context of ICT, and why is it considered a problem for users?	2

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 × 4 = 8 marks)

Q.11	How can studying the preparation, procurement, and disposal of breakfast ingredients help in understanding sustainability?	2
Q.12	For your civics project on “Public transportation and its efficiency in your city”, what steps would you need to take to gather and present your findings?	2
Q.13	Define Low-Fidelity Prototyping Techniques and name any 2 such techniques.	2
Q.14	What does ‘sustainability’ mean to us? Answer with respect to any 2 strategies of sustainability you use in your daily life.	2
Q.15	Nature has its own way of displaying emotions relatable to human nature. Give 2	2

	examples of such analogies.	
Q.16	“Animatics is very much like 'scenario prototyping'. Do you agree with this statement? Explain your reasons.	2

Answer any 3 out of the given 6 questions in 50– 80 words each (4 × 3 = 12 marks)

Q.17	Compare and contrast the chronological and fractured narrative structures. Provide examples to illustrate how each structure influences the storytelling and the reader’s experience.	4
Q.18	Eco-concrete is an innovative construction material designed to be more environmentally friendly than traditional concrete. It incorporates recycled materials, such as glass, industrial byproducts, and other waste products, into its mixture. This approach reduces the need for raw materials and lowers the environmental impact associated with concrete production. The manufacturing process of Eco-concrete often requires less energy and emits fewer greenhouse gases compared to conventional concrete. Analyze the sustainability aspects of Eco-concrete. How does this product differ from traditional concrete in terms of environmental impact and resource use? Discuss the motivations for developing Eco-concrete and the sustainability issues it aims to address.	4
Q.19	In a high-school design course, students are introduced to low-fidelity proto-typing methods. One student, Sachin, is tasked with designing a new type of ergonomic chair. To communicate his initial ideas, Sachin decides to use simple materials such as cardboard, foam, and markers to create his prototype. 4 (a) Describe how Sachin can effectively use the low-fidelity prototyping method to refine his ergonomic chair design. What are the advantages of using cardboard and foam in this context? (b) Discuss how Sachin’s use of these low-fidelity methods can help him gather feedback and make iterative improvements to his design.	4
Q.20	Single-use plastic, such as disposable plastic bags, straws, and cutlery, is a significant contributor to plastic pollution in Japan. These items are used for a short period of time and then discarded, often ending up in the ocean, where they harm marine life and disrupt the ecosystem. Explore how design thinking can be used to address the issue of single-use plastic in Japan.	4
Q.21	Effective communication between patients and healthcare providers is crucial for patient care and recovery. As per a survey, 70% of people have had unpleasant experiences while dealing	4

	<p>with hospital staff during their lifetime. Poor communication and lack of empathy can make it even harder for a patient and their caregiver.</p> <p>Ideate and come out with an innovative solution to this problem, which will enable better hospital-patient communication, which is patient-centric.</p>	
Q.22	<p>According to the survey conducted by Local Circles—a community social media platform, more than 40% of urban Indian parents admit that their children aged between 9 to 17 are addicted to videos, gaming, and social media. (Source: https://www.bqprime.com/nation/a-survey-reveals-how-bad-is-internet-addiction-among-indian-children). This has led to limited physical activity, mental health issues, and poor sleep quality. While parents are aware and worried about this issue, they are unable to curb or change the children’s behavioural patterns towards a positive direction.</p> <p>The objective is to create a product that will not only reduce screen time for children but will make parent-child interaction as enriching and entertaining as possible.</p> <p>Create a prototype by applying design thinking to devise a product that facilitates fulfilling parent-child interaction without dependence on any gadget or screen time. The product could be most suitable for metropolitan cities of India, catering to families from diverse social, economic, and cultural backgrounds.</p>	4