

NIFT MDES CAT Question Paper with Solutions

Time Allowed :180 minutes	Maximum Marks :100	Total questions :3
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. The examination duration is 180 minutes. Manage your time effectively to attempt all questions within this period.
2. The total marks for this examination are 100.
3. There are 3 questions in the question paper having 3 choices in each question.

1. Imagine and render an aerial/bird's eye view of any ONE of the following taken during sunrise:

- (a) Farms during harvesting season
- (b) Coastal region
- (c) A circus setup outside the city

Solution:

(a) Farms during harvesting season

Step 1: Identifying Key Features

- Harvesting season in farms includes golden fields with crops like wheat or rice.
- Farmers, harvesting machines, and storage barns can be seen.
- Roads and irrigation channels separate different plots.

Step 2: Aerial View Representation

- The landscape appears segmented into various plots with different shades of yellow and green.
- Smoke from chimneys and small water bodies reflecting the morning light add realism.

Step 3: Adding Natural Elements

- Sun rising on the horizon casting long shadows.
- Birds flying over the farms.



Quick Tip

Aerial views require attention to scale and perspective. Objects near the horizon appear smaller, while those in the foreground are larger.

(b) Coastal region

Step 1: Identifying Key Features

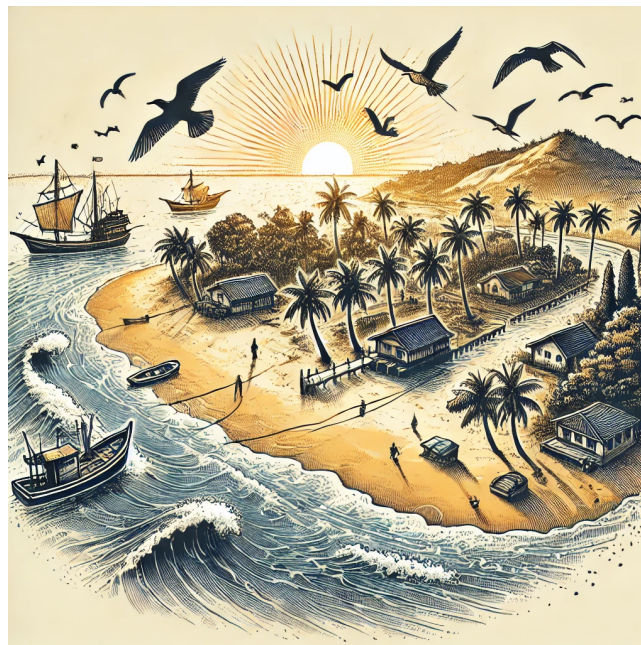
- Coastal regions consist of beaches, sea waves, and boats.
- Human settlements, resorts, and fishermen working near the shore.
- Sunrise reflecting on the ocean surface.

Step 2: Aerial View Representation

- The coastline curves naturally with patches of sand and rocky areas.
- Water color transitions from deep blue to light turquoise near the shore.

Step 3: Dynamic Elements

- Waves forming patterns as they hit the shore.
- Boats floating, some moving while others anchored.



Quick Tip

For drawing aerial views of water bodies, use different shading techniques to show depth and wave movements.

(c) A circus setup outside the city

Step 1: Identifying Key Features

- Circus tents with bright colors and patterns.
- Open field with pathways and stalls surrounding the main tent.
- Vehicles and trailers parked nearby for performers.

Step 2: Aerial View Representation

- The large circular tent is at the center with smaller tents around.
- Pathways connecting ticket counters, food stalls, and performance areas.

Step 3: Dynamic Elements

- Morning light illuminating the field.
- Few people arriving at the venue.



Quick Tip

When illustrating event locations like a circus, ensure a balance between tents, pathways, and surrounding areas to create a structured view.

2. Design and illustrate any ONE of the below-mentioned paradoxical objects (opposite or unlikely purposes).

- (a) A water amusement park in the desert
- (b) A window facing a wall
- (c) A signpost for ants

Solution:

(a) Water Amusement Park in the Desert

Step 1: Understanding the Paradox

- Deserts are known for their extreme heat, dryness, and lack of water.
- Water amusement parks, on the other hand, require a continuous supply of water for pools, slides, and fountains.
- The contradiction arises from placing a water-intensive facility in an arid environment.

Step 2: Conceptualizing the Park

- Water Source Management: The park could rely on underground water reservoirs, desalination plants, and advanced rainwater harvesting techniques.
- Sustainable Infrastructure: The use of solar energy and wind turbines to power water filtration and circulation systems.
- Eco-friendly Landscaping: Native desert plants like cacti and date palms could be incorporated to maintain a balance with the environment.
- Artificial Oasis Effect: The park could be designed to resemble a natural oasis, with palm trees, artificial waterfalls, and sandy beaches.

Step 3: Illustration and Realization

- The image should depict large pools, lazy rivers, and thrilling water slides emerging from the golden sand dunes.
- Features such as shaded relaxation areas, cooling mist zones, and heat-resistant pathways

enhance visitor comfort.



Quick Tip

To design paradoxical structures, focus on how technology and sustainable solutions can make the impossible possible. Think about resource management, environmental adaptation, and energy conservation.

(b) Window Facing a Wall

Step 1: Understanding the Paradox

- A window is typically installed to provide a view, ventilation, or natural lighting.
- If a window directly faces a solid wall, it appears to lose its functionality, creating an ironic and paradoxical effect.

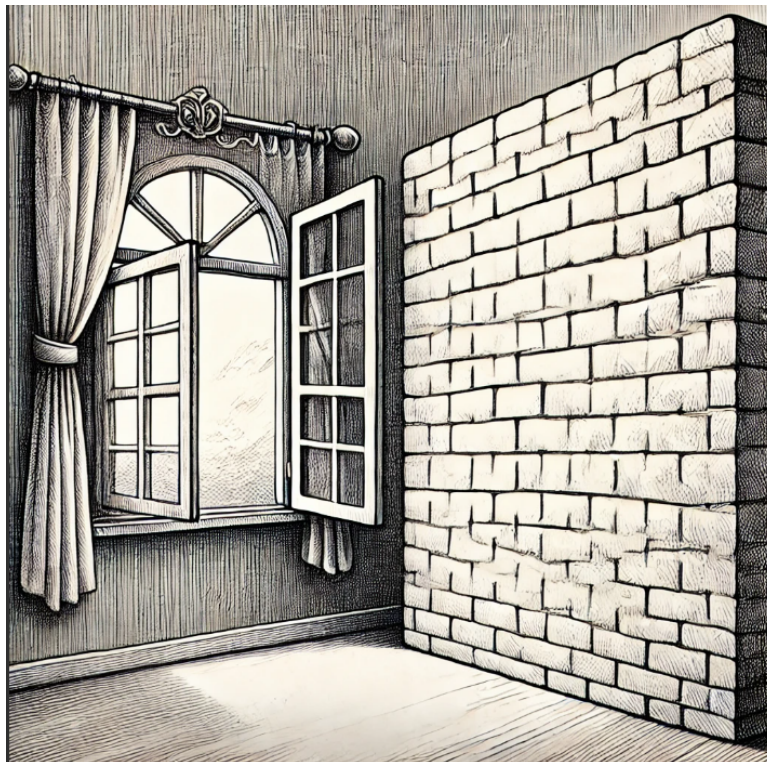
Step 2: Finding Functional Alternatives

- Architectural Concept: The wall in front of the window could be creatively designed to make the space more engaging. Possible modifications include murals, interactive LED screens, or textured surfaces that create illusions of depth.

- Symbolic Meaning: The design could represent philosophical ideas such as restriction, lost opportunities, or confinement.
- Utility Approach: The window could serve as a privacy feature while still allowing diffused light through frosted or stained glass.

Step 3: Illustration and Realization

- The visual representation should include a window that opens to a completely blank wall, perhaps with artistic elements or projected visuals.
- It could also include functional adaptations such as artificial lighting embedded into the window frame.



Quick Tip

When dealing with architectural paradoxes, think about alternative functionalities. A window may not serve its traditional purpose but can have aesthetic, symbolic, or functional value in other ways.

(c) Signpost for Ants

Step 1: Understanding the Paradox

- Traditional signposts are meant for human navigation and are designed to be read visually.
- Ants, however, do not rely on visual cues for navigation; they use pheromone trails and scent-based communication.

Step 2: Redefining the Purpose

- Miniature Signpost: The signpost could be extremely small, designed to fit within an ant colony's path.
- Scent-based Guidance: Instead of text, the signpost could release pheromone markers to guide ants towards food sources or away from danger.
- Micro Engraving: With the advancement of technology, tiny symbols visible under a microscope could be engraved on the signpost for scientific studies of insect behavior.

Step 3: Illustration and Realization

- The signpost could be shown as a tiny wooden plank, planted in the soil near an anthill, with carved symbols such as an arrow pointing towards food.
- Alternatively, it could be a modernized version with sensors and chemical dispensers that interact with the ant's natural communication system.



Quick Tip

When designing for non-human users, consider their natural methods of communication, movement, and interaction with the environment. This approach can lead to innovative and functional designs.

3. Conceptualize any one of the following to address global warming and reduce carbon footprint. Describe in not more than 250 words.

- (a) Cafe
- (b) Clinic
- (c) Wedding hall

Solution:

(a) Eco-Friendly Café

Step 1: Sustainable Architecture - The café is designed with a **green rooftop**, covered in vegetation to provide insulation and reduce heat absorption.

- **Solar panels** generate renewable energy, cutting dependency on fossil fuels.
- Walls are made from **recycled wood and mud bricks**, reducing carbon footprint and maintaining a natural cooling effect.

Step 2: Energy Efficiency - Large **glass-paneled windows** allow maximum sunlight, reducing the need for artificial lighting.

- **Energy-efficient LED lights** and motion sensors minimize energy wastage.
- Smart temperature regulation systems optimize heating and cooling needs.

Step 3: Sustainable Materials and Waste Reduction - Furniture is crafted from **reclaimed wood and upcycled materials**.

- **Biodegradable utensils** replace plastic cutlery, and composting bins manage organic waste.

Step 4: Sustainable Sourcing and Supply Chain - Locally sourced, organic food ensures reduced transportation emissions.

- The café promotes plant-based menu options, reducing the carbon footprint of food production.



Quick Tip

Sustainable cafés can integrate renewable energy, composting, and waste reduction techniques to minimize environmental impact.

(b) Sustainable Clinic

Step 1: Green Infrastructure and Energy Conservation - The clinic incorporates **solar panels** to generate electricity, reducing reliance on non-renewable sources.

- **Rainwater harvesting** systems collect and purify water for non-drinking purposes.
- **Eco-friendly HVAC systems** optimize energy use and maintain air quality.

Step 2: Sustainable Medical Waste Management - **Biodegradable PPE kits** and sterilization techniques reduce hazardous waste.

- A **waste segregation system** categorizes materials for proper disposal and recycling.
- Reusable syringes and biodegradable gloves further cut down plastic waste.

Step 3: Digital Paperless Workflow - Patients' records are stored electronically, minimizing paper consumption.

- Online consultations reduce unnecessary travel, lowering emissions.

Step 4: Eco-conscious Medical and Dental Products - The clinic offers bamboo toothbrushes, refillable toothpaste dispensers, and biodegradable floss.

- Chemical-free sanitization techniques ensure sustainable disinfection without harming the environment.



Quick Tip

Sustainable clinics should integrate green energy solutions, paperless systems, and eco-conscious medical waste management.

(c) Eco-Friendly Wedding Hall

Step 1: Sustainable Venue Design - The hall is built using **bamboo structures, recycled wood, and eco-friendly cement**.

- **Solar panels** generate renewable energy to power the lighting and ventilation systems.
- The open-air structure ensures natural airflow, reducing energy needs for air conditioning.

Step 2: Eco-friendly Decor and Lighting - Decorations include **LED lighting, real flowers, and fabric banners** instead of single-use plastics.

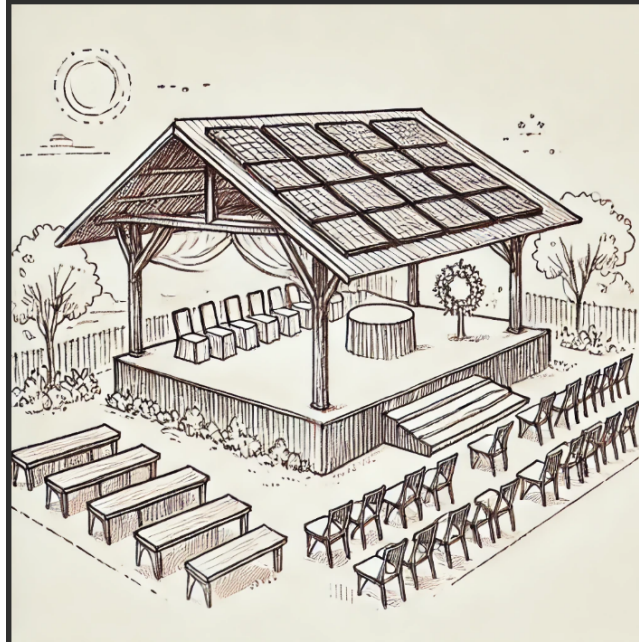
- Natural and reusable materials are used for centerpieces and stage setups.

Step 3: Green Catering and Waste Reduction - Locally sourced, organic, plant-based menu options reduce environmental impact.

- **Zero-waste policies** include composting food scraps and using biodegradable plates.

Step 4: Sustainable Guest Transport - A shared shuttle system, electric vehicles, and bicycle-friendly pathways reduce transportation emissions.

- Guests are encouraged to offset their carbon footprint by planting trees or donating to eco-friendly organizations.



Quick Tip

Eco-friendly wedding halls can reduce environmental impact through sustainable decor, green catering, and renewable energy integration.