

OFFICIAL UCEED 2024 SAMPLE QUESTIONS

Table of Contents

1. INTRODUCTION
2. UCEED NAT Sample Questions
3. UCEED MSQ Sample Questions
4. UCEED MCQ Questions
5. Other Useful Resources

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Introduction

Welcome to this helpful E-book, designed to assist you in preparing for the undergraduate Common Entrance Examination for Design (UCEED) 2024. The purpose of this e-book is to provide you with a sample of the questions that you may encounter in the [UCEED exam](#), which is one of the most competitive entrance exams for design aspirants in India. The UCEED exam is conducted by the Indian Institute of Technology Bombay, under the guidance of the UCEED-CEED Implementation Committee. The exam is open to all nationals and offers admission to the Bachelor of Design (B.Des) programs at [IIT Bombay](#), IIT Guwahati, IIT Hyderabad, and [IIITDM Jabalpur](#).

In this e-book, we offer a set of official UCEED 2024 sample questions, covering three types of questions: Numerical Answer Type (NAT), Multiple Select Questions (MSQ), and Multiple Choice Questions (MCQ). These questions are based on the topics and skills that are tested in the UCEED exam, such as visualization and spatial ability, observation and design sensitivity, environmental and social awareness, analytical and logical reasoning, language and creativity, design thinking, and problem-solving. This information is crucial for enhancing your preparation and familiarising yourself with the exam pattern and difficulty level.

This ebook is a valuable resource for all design aspirants, providing detailed insights and guidance to help you ace the UCEED exam. So, let's get started with this journey towards a successful design career.

All the best!

Team Careers360

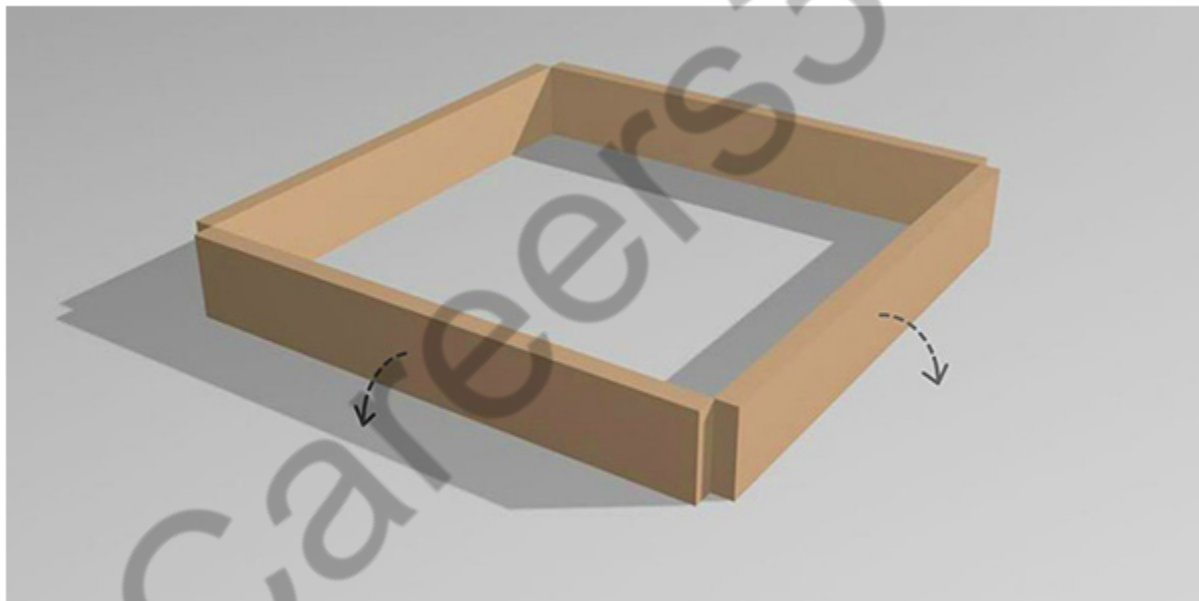
UCEED 2024

NAT

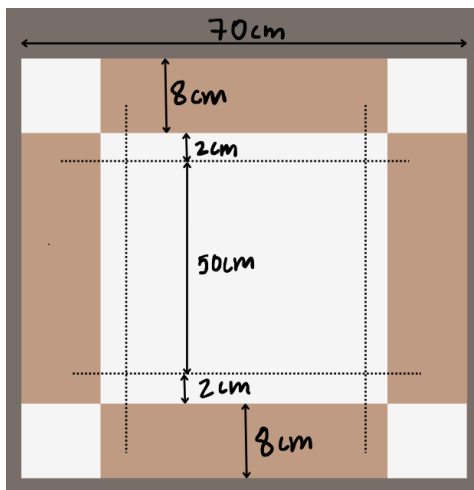
Sample

Questions

Question 1 - Four identical pieces of wood of length 50 cm X 80 cm X 2 cm are arranged as shown in the figure. Another larger square is generated by rotating all the wooden panels along the outer edges and extending the outermost edges till they touch each other. What is the area of the larger square thus constructed?



Answer 1:



We know that before rotation, the area of the square formed by the initial arrangement of the wooden pieces is going to be:

$$\text{Area of a square} = \text{Side}^2$$

$$\text{Area} = 50^2$$

$$\text{Area} = 2500 \text{ cm}^2$$

In the next case, when the pieces are rotated and a square is formed, the area alters as such: Twice the thickness i.e. 2cm and twice the width of the pieces, i.e. 8cm adds to the overall length of one side of the square, considering two sides of the openly rotated pieces. This then gives us the size of one side as:

$$50+2+8+2+8= 70\text{cm}$$

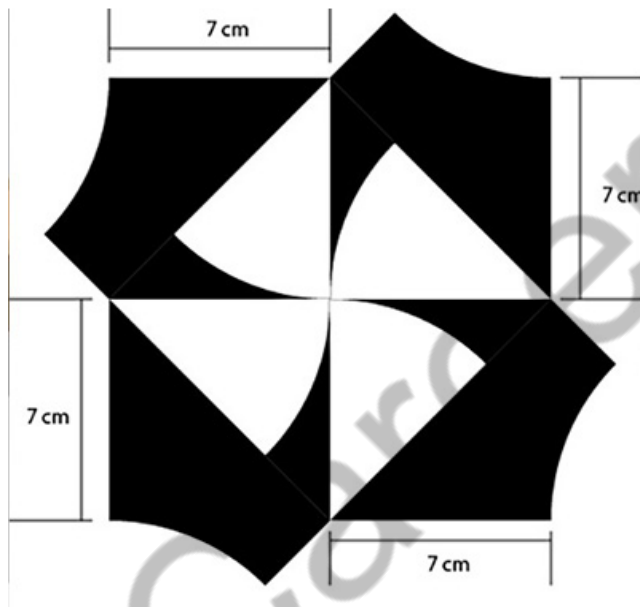
So, the new area becomes:

$$\text{Area of a square} = \text{Side}^2$$

$$\text{Area} = 70^2$$

$$\text{Area} = 4900 \text{ cm}^2$$

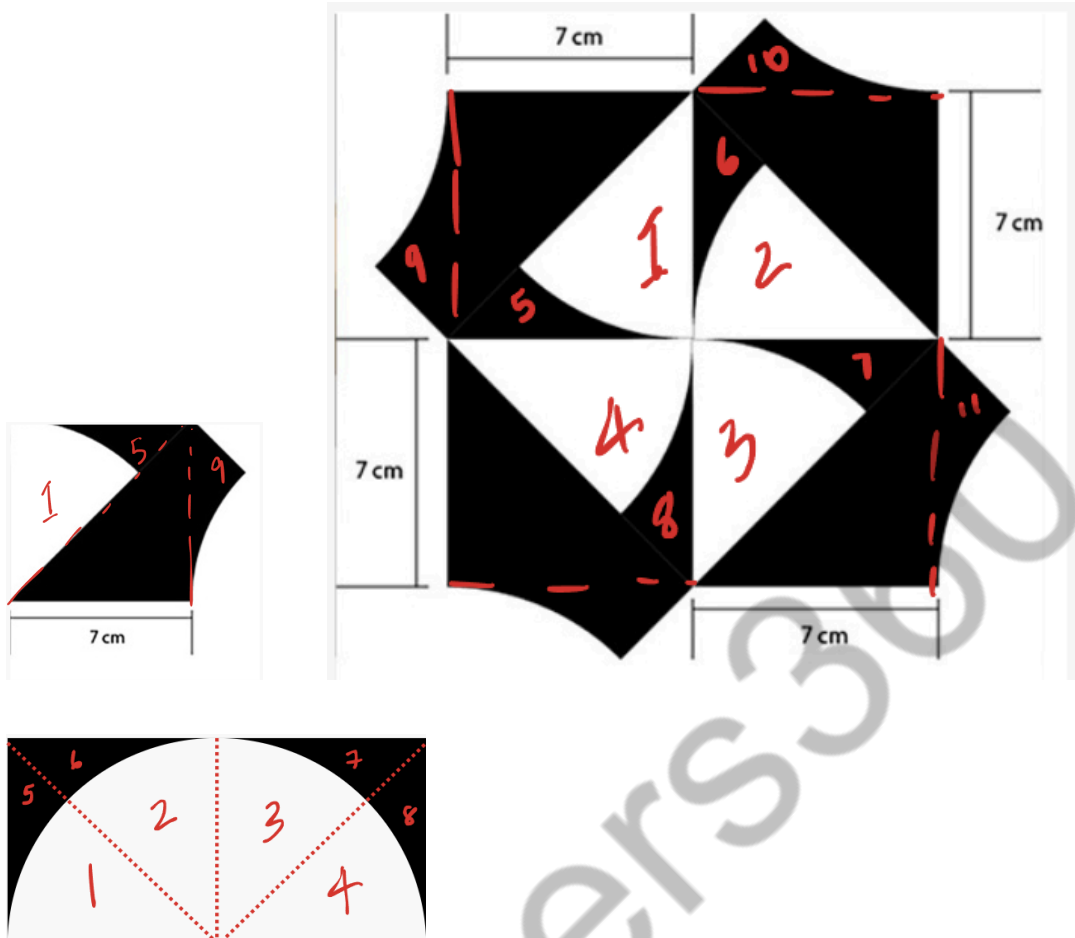
Question 2 - Area of the black surface in the following image is _____ cm square. All curves have the same radii 2. What is the value of pi as $\frac{22}{7}$?



Answer 2:

Let us divide the pattern into four equal quadrants. Let us divide each quadrant square diagonally. We find that the white space comprises 4 sectors within the pattern.

On re-arranging these figures as a semicircle, we get the area to be:



Side of Sector = side of square = 7cm

$$\text{Area} = \frac{1}{2} \times \pi R^2$$

$$\text{Therefore, area} = \frac{1}{2} \times \pi 7^2 = 77 \text{ cm}^2$$

Let us consider that the semicircle is placed in such a way after rearrangement:

Then the area of the rectangle enclosing this semicircle is :

$$L \times B = 14 \times 7 = 98 \text{ cm}^2$$

Therefore the subtracted area, which is all in the shape of S is going to be =

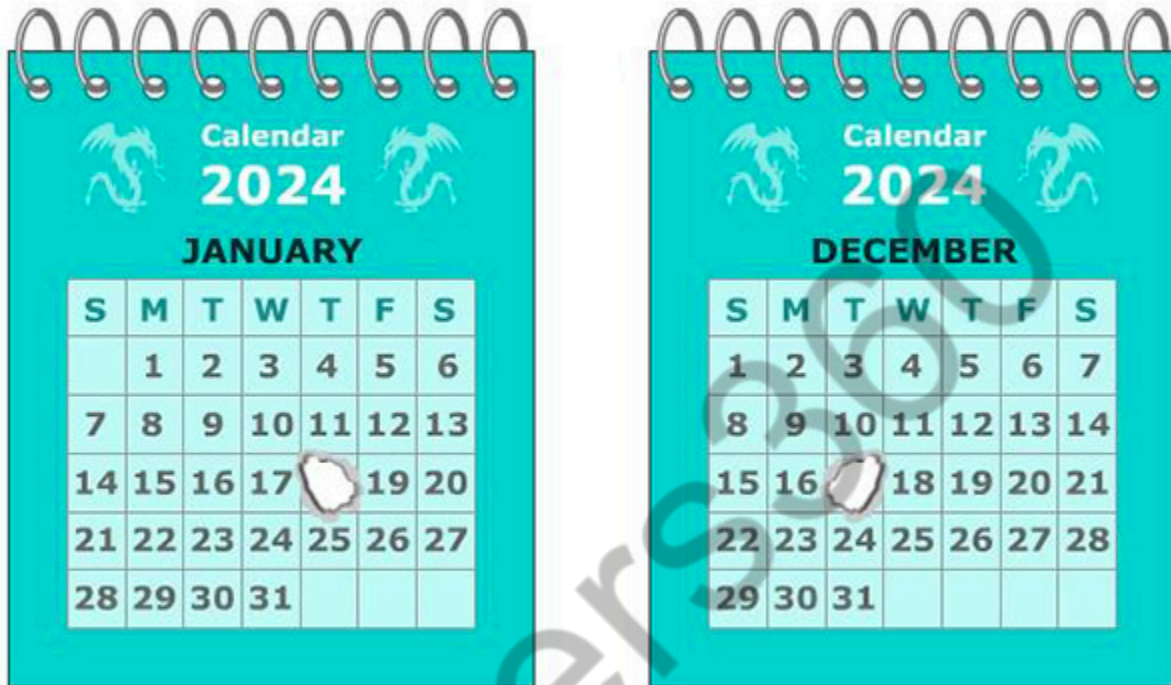
(Area of Rectangle - Area of Semicircle) x 2

$$= 98 - 77 = 21,$$

$$21 \times 2 = 42 \text{ cm}^2$$

$$\text{Total area covered in black therefore} = 42 + 98 = 140 \text{ cm}^2$$

Question 3: Chinnu was excited about the new year when she bought a new calendar to keep on her study table. While playing, her baby sister poked a hole through the entire calendar from January to December as seen in the image. If every page has a same 5 week table structure for each month, and if all consecutive months were printed back to back, which date in the month of April has a hole in it?



Answer 3:

We know that a week repeats after every 7 days. Let's say today is a Thursday, then it will be Thursday again 7 days later. The 8th day will be Friday, which is $7+1$, then $7+2=9$ th day will be a Saturday, and so on.

Now, since all months are printed back to back consecutively, due to the basic format of the calendar, the day punched through will have to be either a Tuesday or Thursday.

This means that the holes will be either on the third Tuesday or the third Thursday of the month.

This also means that the hole punctured is hence on the third Tuesday or Thursday of the third week of April.

As observed, the holes will be arranged in odd or even months as follows:

January= third Thursday of the month

December= third Tuesday of the month

Since April is the 4th even month, the hole will be on the third Tuesday of the month as well.

Given that this is a leap year,

January = 31 days, Feb= 29 days, March= 31

Therefore, the number of days till April 1st is going to be =

$31+29+31= 91$ days

Splitting 91 days as part of a week, we have :

$$91/7 = 12$$

This means that

Since 1st Jan is a Monday, 1st April is also a Monday,

We can infer from this that:

$$3\text{rd Tuesday} = 2 + 14 = 16\text{th April}$$

Therefore, the hole lies on 16th April, Tuesday 2024.

Question 4: A smaller square of 5 cm is placed inside a bigger square that all 4 corners of the square are touching the sides of the bigger square. If the smallest distance between the corners of the two squares is 3 cm, what is the area of the bigger square in sq cm that falls outside smaller one?

Answer 4:

Let the side of the large square = x

Side of small square = $x-5$

Since the Area of a large square = $4x$ area of a small square,

$$x^2 = 4x(x-5)^2$$

$$3x^2 - 30x - 10x + 100 = 0$$

$$x - 10 = 0$$

$$3x - 10 = 0$$

Therefore, $x = 10$ or $x = 10/3 = 3.333$

Since $x = 10/3 = 3.333$, it gives a negative value and is hence canceled.

The value is hence 10 cm.

UCEED 2024

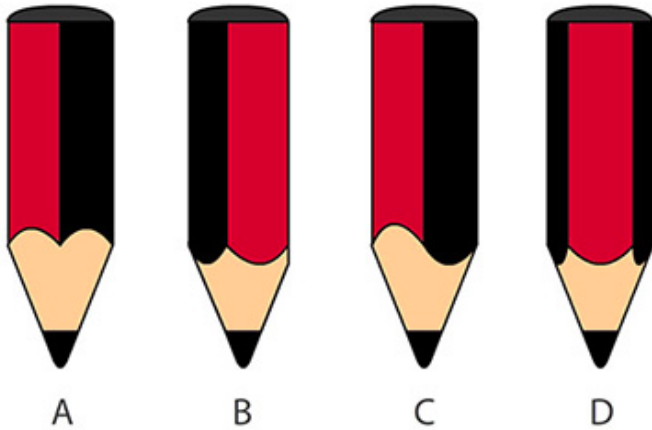
MSQ

Sample

Questions

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Question 1: A pencil with a pentagonal cross-section was sharpened using a pencil sharpener. Which of the options correctly presents the side view of the pencil?

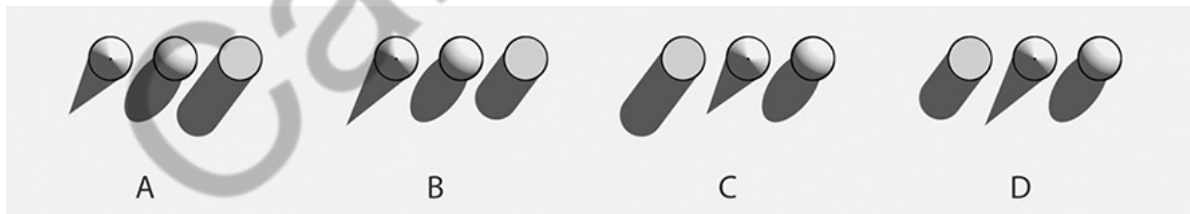


Answer 1:

A and C are not possible as we know how a sharpener works. The cross-section is made in such a way that the blade cuts the pentagon in a way that the curves resulting are outwards, towards the lead. B and D on the other hand follow this section, while also showing the 2 sides of a pentagonal pencil.

Hence, B and D are the correct options

Question 2: A sphere, a cylinder and a cone, with equal heights are resting on a surface along a straight line. If a source of light is fixed and a light rays are parallel, which of the options shows shadows correctly?

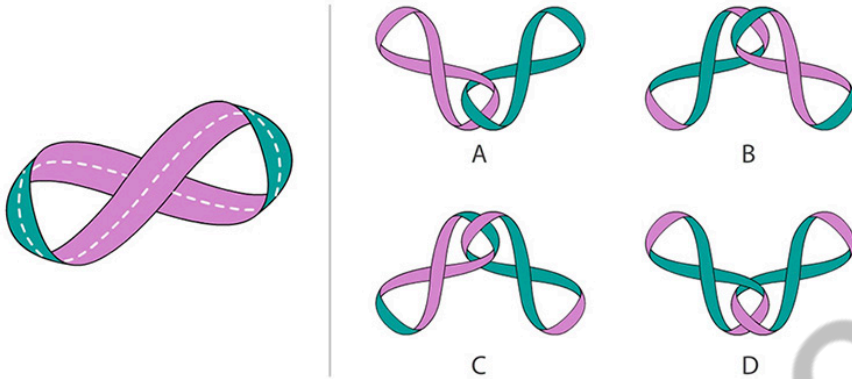


Answer 2:

The shadow source seems to be on the top of the objects. This means that the shadows formed can be of variable lengths and not necessarily all the same. Since options B and D show shadows of the same length, they are wrong.

A and C are hence the right options.

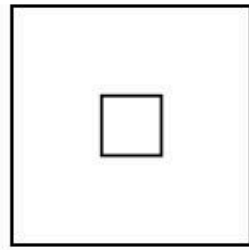
Question 3: A paper strip with a different colour on each side is joined as shown in the figure. If this strip is fixed along the dashed line, which of the options correctly represent(s) the result(s)?



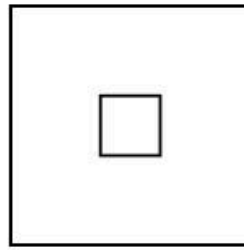
Answer 3:

If the ribbon shown is cut along the dashed lines, Keeping one side fixed, if we rotate, the ribbon, we get the options C and D. This is true as the strips are folded in such a way that the two folds will always have different colors, and they will always be intersected like a chain link that does not happen in option B. In option B, the two ribbons are just placed over each other. The correct options hence are C and D

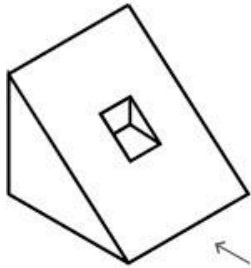
Question 4: Which of the objects given in the options can produce a top and front view as shown in the figure? The arrow shows the direction of the front view.



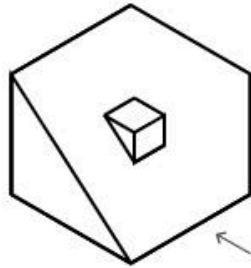
Top View



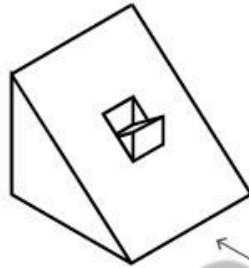
Front View



A



B



C



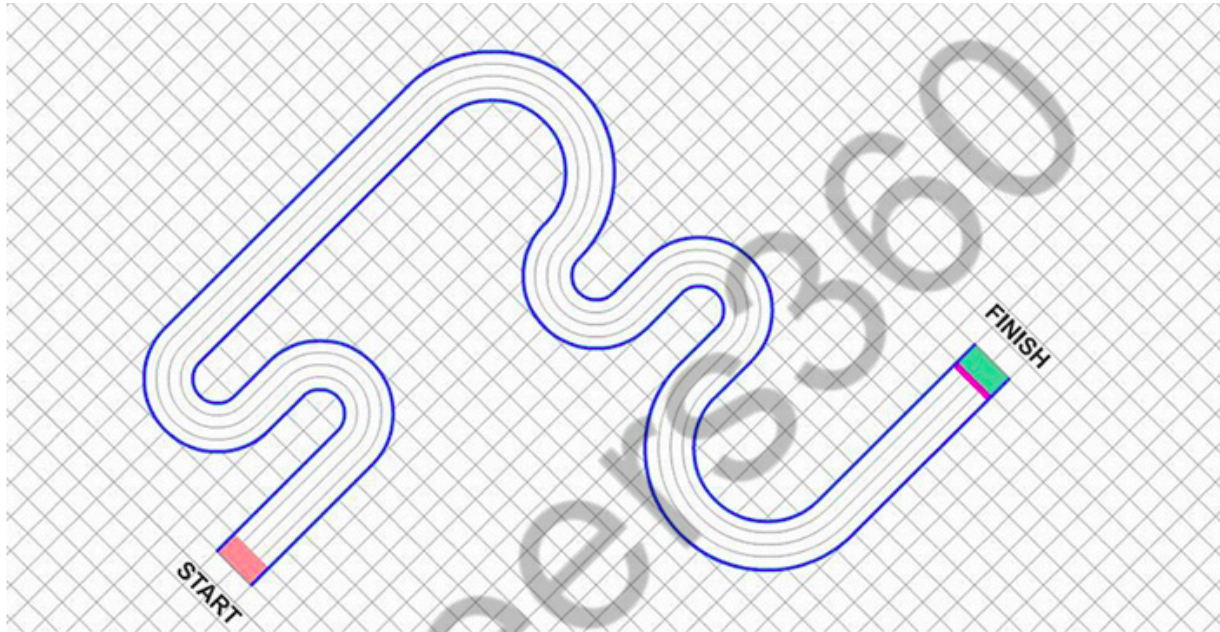
D

Answer 4:

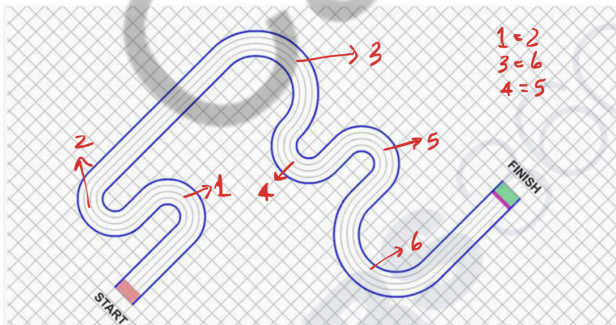
Since all the other options cannot produce an equal-sided top view, i.e. a square, the correct option for this remains B as it is isometric.

**UCEED 2024
MCQ
Sample
Questions**

Question 1: On a race track shown below choose the correct starting configuration. The athletes are not allowed to change the tracks. Each grid is 2m X 2m.

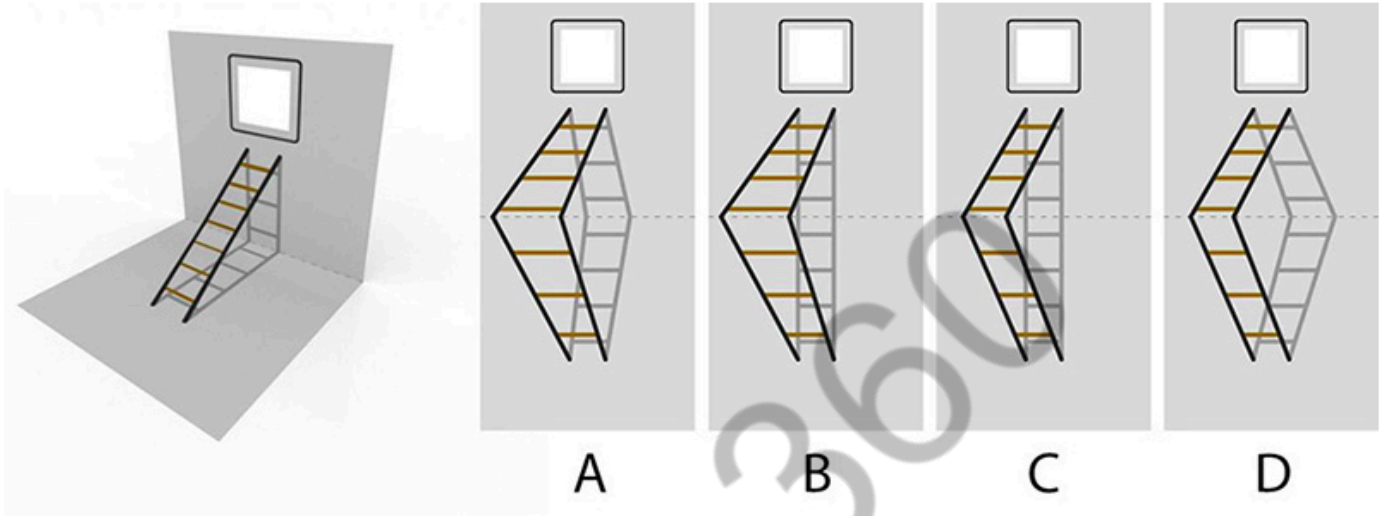


Answer 1:



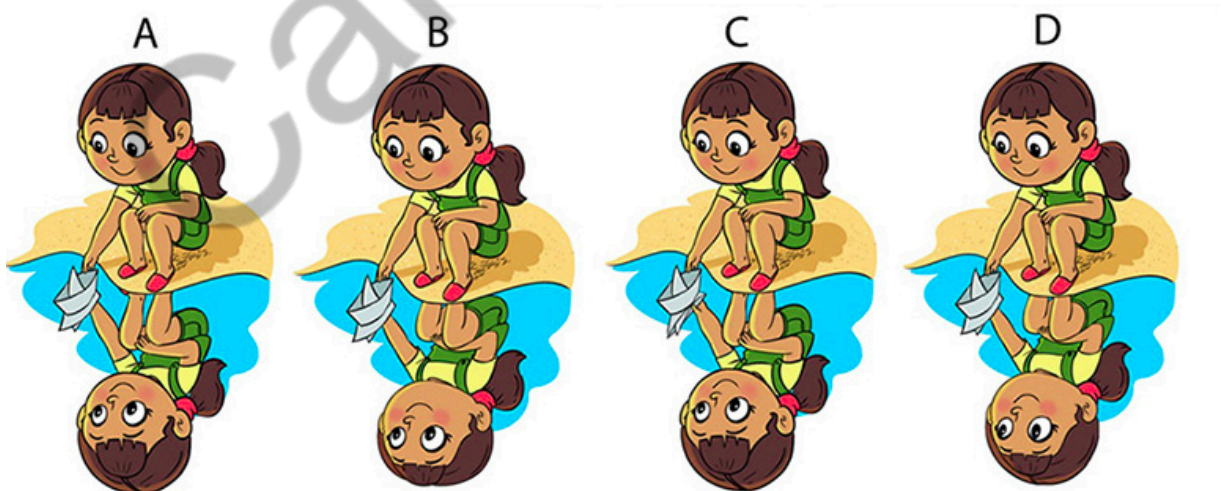
There are a total of 6 turns in this figure that are all equal to each other. This means that the distance covered by all the athletes will be the same if they start at the same time. Hence, the correct answer to that is C.

Question 2: An artwork on paper creates an illusion of a ladder resting on a wall when a paper is folded and viewed from a specific angle as shown in the image. Which of the options correctly depicts this artwork on the paper when unfolded?



Answer 2: The shadow of the ladder is parallel to the line of paper. This happens only in options B and C. In option B, there is relatively less space between the ladder and the shadow of the ladder, which is correct in option C. The correct answer is hence C

Question 3: Aastha is sailing a paper boat in still water. Which of the given options represents the reflection correctly?

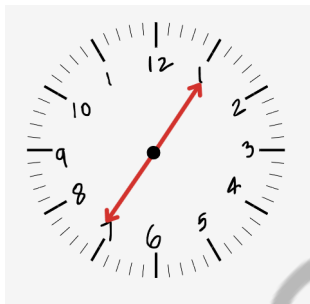


Answer 3: In both options A and C, the reflection shows how far away the girl is sitting from the bank. This does not occur in the case of this reflection. Hence in B and D, B is the correct option as in option D, the reflection of her eyes does not match her real eye positions. The correct option therefore is B.

Question 4: At 6:00 pm, the hour hand and the minute hand of an analog clock are at 180 degrees with each other. After approximately how much time will they be at 180 degrees with each other again?

- 48 minutes, 40 seconds
- 54 minutes, 33 seconds
- 60 minutes
- 65 minutes, 27 seconds

Answer 4: Drawing each of the options, the correct answer is D.



Other Useful Resources

UCEED Previous Year's Question Papers with Solutions PDF

Students must practice multiple UCEED Exam Question papers from previous years to understand the exam pattern and syllabus. This is the best way to analyze what type of questions will be asked for the different sections, NAT, MSQs, or MCQs. Aspirants can download the "UCEED Previous Year's Question Papers with Solutions PDF " eBook which covers UCEED Previous Year's questions extensively, all the way from 2019- 2024. The preparation tips and paper analysis provided will also be instrumental in scoring well.

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