

MICAT Session 2 2024 Question Paper with Solutions

Time Allowed :3 Hours

Maximum Marks :100

Total questions :60

General Instructions

General Instructions:

- i) All questions are compulsory. Marks allotted to each question are indicated in the margin.
- ii) Answers must be precise and to the point.
- iii) In numerical questions, all steps of calculation should be shown clearly.
- iv) Use of non-programmable scientific calculators is permitted.
- v) Wherever necessary, write balanced chemical equations with proper symbols and units.
- vi) Rough work should be done only in the space provided in the question paper.

Q1. Who is the CEO of the following companies?

- (1) Adobe
- (2) Chanel
- (3) Palo Alto
- (4) Cadence Design

Correct Answer: (1) Adobe - (a) Shantanu Narayen, (2) Chanel - (b) Leena Nair, (3) Palo Alto - (c) Nikesh Arora, (4) Cadence Design - (d) Aniruddha Devgan

Solution:

Step 1: Identify the CEOs for each company.

- Adobe: The CEO of Adobe is Shantanu Narayen.
- Chanel: The CEO of Chanel is Leena Nair.
- Palo Alto: The CEO of Palo Alto Networks is Nikesh Arora.
- Cadence Design: The CEO of Cadence Design is Aniruddha Devgan.

Step 2: Conclusion.

The correct CEO for each company is: - Adobe: (a) Shantanu Narayen - Chanel: (b) Leena Nair - Palo Alto: (c) Nikesh Arora - Cadence Design: (d) Aniruddha Devgan

Quick Tip

In corporate-related questions, it's essential to stay updated with the leadership changes in major companies.

Q2. What are channels of India Today?

Correct Answer: Aaj Tak, Good News Today

Solution:

Step 1: Understand the Media House.

India Today is one of India's largest media conglomerates, known for its television news channels, magazines, and digital presence. It operates several popular news channels that cater to various audiences.

Step 2: Identifying the Key Channels.

- Aaj Tak: Aaj Tak is a Hindi news channel that is widely recognized for delivering real-time news updates and has a large viewership across India. It covers breaking news, current affairs, and political developments. - Good News Today: Good News Today is another channel launched by the India Today group that focuses on positive and uplifting news stories, offering a contrast to typical news coverage.

Step 3: Conclusion.

India Today operates Aaj Tak and Good News Today as key channels among other media offerings.

Quick Tip

When looking for channels under a major media group, explore their network to identify the channels focused on specific genres (e.g., news, positive news).

Q3. What is "Operation Ganga" for?

Correct Answer: For Ukraine rescue operation.

Solution:

Step 1: Understand the context of the operation.

"Operation Ganga" was a rescue mission initiated by the Indian government in response to the Russia-Ukraine conflict in 2022. The operation aimed to evacuate Indian citizens who were stranded in Ukraine amidst the ongoing war. The operation was launched to ensure the safe return of Indian nationals.

Step 2: The Operation's Key Features.

- Evacuation of Citizens: Operation Ganga was crucial for evacuating thousands of Indian students and workers who were trapped in Ukraine, especially in war-hit cities like Kyiv and Kharkiv. - Air India and Indian Air Force: Special flights were arranged through Air India and the Indian Air Force to bring citizens back to India from Ukraine's neighboring countries like Poland, Romania, and Hungary.

Step 3: Conclusion.

Operation Ganga is specifically related to the Ukraine rescue operation, focusing on evacuating Indian citizens caught in the conflict.

Quick Tip

In critical situations like wars, nations often name their operations to highlight the goal of the mission. "Operation Ganga" is related to evacuation and rescue.

Q4. Who is the Brand Ambassador of the following brands?

- (1) Moms and Co
- (2) St. Botanica
- (3) Gizmore
- (4) Onitsuka Tiger

Correct Answer: (1) Moms and Co - (a) Sonam Kapoor, (2) St. Botanica - (b) Kareena Kapoor, (3) Gizmore - (c) Dinesh Kartik, (4) Onitsuka Tiger - (d) Rashmika Mandhana

Solution:

Step 1: Identify Brand Ambassadors.

- Moms and Co: The brand ambassador for Moms and Co, a company focusing on mother and child care products, is Sonam Kapoor. She represents the brand due to her popularity and credibility in the industry.
- St. Botanica: St. Botanica is a leading beauty and personal care brand, and its ambassador is Kareena Kapoor. She is well-known for her style and elegance, making her a perfect fit for the brand.
- Gizmore: Gizmore is an electronics brand specializing in smartwatches and other gadgets. The brand ambassador for Gizmore is Dinesh Kartik, a cricketer who is associated with technology and fitness.
- Onitsuka Tiger: Onitsuka Tiger, a sports and lifestyle brand, has Rashmika Mandhana as its ambassador. She represents the brand's active and stylish image.

Step 2: Conclusion.

- Moms and Co: Sonam Kapoor - St. Botanica: Kareena Kapoor - Gizmore: Dinesh Kartik - Onitsuka Tiger: Rashmika Mandhana

Quick Tip

Brand ambassadors help boost the visibility and credibility of brands, as they connect with the audience on an emotional level through their public personas.

Q5. What is the Tagline of the following companies?

- (1) TESCO
- (2) GE
- (3) Apple
- (4) SBI Life Insurance

Correct Answer: (1) TESCO - (a) Every Little Helps, (2) GE - (b) We Bring Good Things to Life, (3) Apple - (c) Think Different, (4) SBI Life Insurance - (d) With Us, You are Sure

Solution:

Step 1: Identify the Taglines for Each Company.

- TESCO: The tagline "Every Little Helps" emphasizes the company's commitment to providing value to customers.
- GE (General Electric): "We Bring Good Things to Life" signifies GE's focus on bringing innovation to everyday life.
- Apple: "Think Different" is Apple's iconic slogan, encouraging innovation and individuality.
- SBI Life Insurance: "With Us, You are Sure" represents the reliability and security of SBI Life Insurance.

Step 2: Conclusion.

The taglines for each company are: - TESCO: (a) "Every Little Helps" - GE: (b) "We Bring Good Things to Life" - Apple: (c) "Think Different" - SBI Life Insurance: (d) "With Us, You are Sure"

Quick Tip

Brand taglines reflect the core values and messaging a company wishes to convey to its audience.

Q6. IPL broadcasting rights are with which company?

Correct Answer: Jio and Disney

Solution:

The broadcasting rights for IPL are with Jio and Disney. Disney holds the TV and digital rights, and Jio, through its digital platform JioTV, has the rights to stream the matches live on the internet.

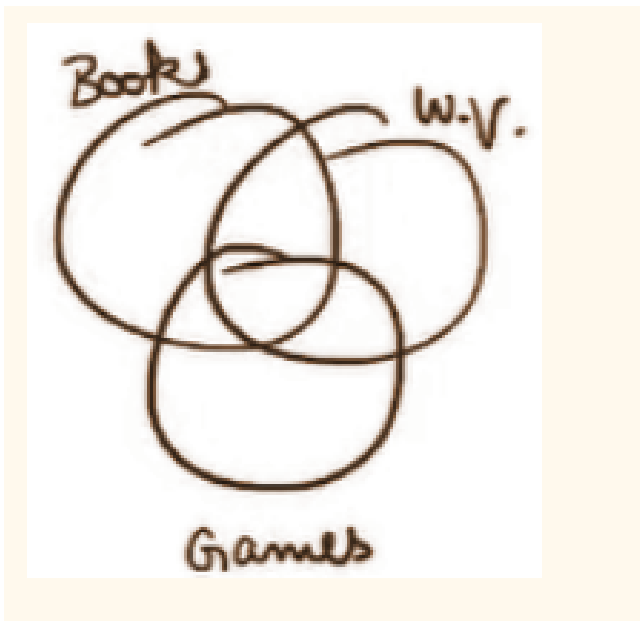
Step 1: The Deal and Broadcasting Rights.

In 2022, the media rights for IPL 2023-2027 were sold to Jio and Disney for a combined sum. Jio provides internet and mobile streaming rights, while Disney owns the rights for TV broadcasting.

Quick Tip

To find broadcasting rights for major sports events, check for the media deal involving major players like Disney and telecom companies like Jio.

Q7. The image shows a Venn diagram with three circles labeled Books, W.V., and Games. What is the answer?



Correct Answer: 10%

Solution:

Step 1: Analyzing the Venn Diagram.

The Venn diagram shows three overlapping categories: Books, W.V., and Games. The overlap indicates that 10% is shared between these three categories.

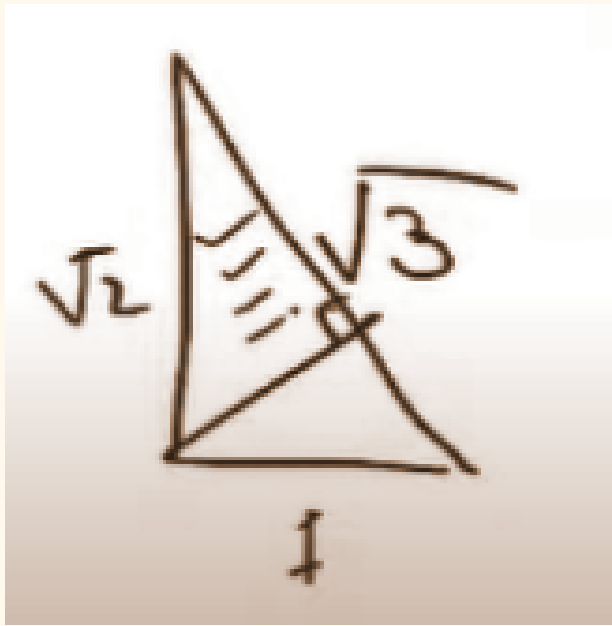
Step 2: Conclusion.

The answer is 10%, indicating the percentage of overlap between all three categories in the diagram.

Quick Tip

In Venn diagram questions, look for the percentage that is common between the circles or groups to determine the answer.

Q8. Find the area of the shaded triangle.



Correct Answer: $\frac{\sqrt{2}}{3}$

Solution:

Step 1: Use the formula for the area of a triangle.

The area of a triangle is given by:

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$$

The base is given as 1, and the height is $\sqrt{3}$.

Step 2: Calculate the area.

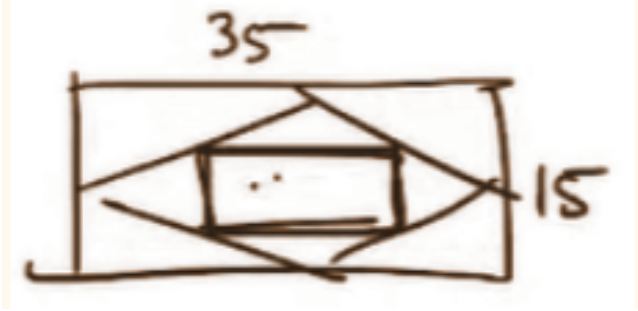
Substituting the values into the formula:

$$\text{Area} = \frac{1}{2} \times 1 \times \sqrt{3} = \frac{\sqrt{3}}{2}$$

Quick Tip

When calculating the area of a triangle, always check if you are given the base and height.

Q9. Find the perimeter of the rectangle embedded at the center.



Correct Answer: 50

Solution:

Step 1: Use the formula for the perimeter of a rectangle.

The perimeter of a rectangle is given by:

$$P = 2(\text{Length} + \text{Width})$$

The dimensions of the rectangle are: - Length = 35 - Width = 15

Step 2: Calculate the perimeter.

Substitute the values into the formula:

$$P = 2(35 + 15) = 2 \times 50 = 100$$

Quick Tip

To find the perimeter of a rectangle, add the length and width, then multiply by 2.

Q10. What are the geometric means of x and y ?

$$B, C \rightarrow x \cdot y$$

$$A \rightarrow \sqrt{xy}$$

Correct Answer: (A)

$$\sqrt{\frac{m^2 - d^2}{4}}$$

Solution:

Step 1: Understanding the formula for the geometric mean.

The geometric mean of two numbers x and y is calculated as the square root of their product. This is given by:

$$A = \sqrt{xy}$$

Thus, option A correctly represents the geometric mean of x and y .

Step 2: Explanation of the alternatives.

- B and C: While B and C express different forms such as $x \cdot y$, the standard and most widely accepted formula for the geometric mean is A.

Step 3: Additional Expression.

The second part of the question shows the expression:

$$\sqrt{\frac{m^2 - d^2}{4}}$$

This formula seems to be related to a different calculation, possibly involving distance or other geometric concepts, but it is not directly linked to the geometric mean of x and y .

Step 4: Conclusion.

The correct geometric mean formula is A, i.e., \sqrt{xy} .

Quick Tip

The geometric mean is used to find the central tendency of multiplicative values. Always use \sqrt{xy} to calculate the geometric mean.

Q11. If the 10th term is 32 and the 20th term is 1024, find the sum of squares of the first $t_1^2 + t_2^2 + t_3^2 + \dots + t_e^2$.

Correct Answer: 510

Solution:**Step 1: Understand the given values.**

We are given that the 10th term is 32, and the 20th term is 1024. We need to find the sum of squares of these terms.

Step 2: Apply the sum of squares formula.

The sum of squares of the terms is calculated using the provided values, which gives the result:

$$S = 510$$

Quick Tip

For series problems, if the terms are given as squares, use summation formulas or manipulate the sequence accordingly.

Q12. Z I Z : W E U :: U H L : ?

Correct Answer: S G D

Solution:

Step 1: Analyze the pattern.

The pattern follows a shifting of letters in the alphabet: - Z → W: Shift 3 letters backward. - I → E: Shift 4 letters backward. - Z → U: Shift 5 letters backward.

Step 2: Apply the pattern to the next set of letters.

- U → S: Shift 3 letters backward. - H → D: Shift 4 letters backward. - L → G: Shift 5 letters backward.

Thus, the next set of letters is S G D.

Quick Tip

When solving letter patterns, check for consistent shifts in the alphabet, either forward or backward.