



# National Analytical Brains Competition 2023

## NAB Competition 2023 - Grade 05

### Mathematical Ability

All questions are mandatory. Please note there is no negative marking:

1. Rohan took a loan of ₹ 22,500 to buy a Laptop. He paid back a total of ₹23,280 in one year. How much did he pay back every month?

- ₹780
- ₹1940
- ₹1875
- ₹1840

2. Chiranjeev has made a new house. He wants to lay tiles on the floor. The size of the room is 18 feet by 12 feet. What size of tile should he buy for his room, so that he can lay it without cutting?

- 1 foot × 1 foot
- 2 feet × 2 feet
- 3 feet × 3 feet
- Any of the above tiles



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3. Sameer saw an advertisement, "Offer on Pens". Which one out of the four below offers is best one?

- 12 pens of ₹840
- 15 pens for ₹900
- 18 pens for ₹990
- 21 pens for ₹1260

4. Which of the following statement is correct?

- To find 98 times 54, I multiply 100 times 54 and subtract 6 times 98
- To find 98 times 54, I multiply 100 times 50 and subtract 2 times 54
- To find 98 times 54, I multiply 100 times 54 and add 2 times 54
- To find 98 times 54, I multiply 100 times 54 and subtract 2 times 54

5. There were 43 cars in the race. They all finished the 260 km of the race and they each used about 1 liter of petrol to go 10 km. About how many liters of petrol did the cars use altogether to finish the race?

- 2600 liters
- 11180 liters
- 1118 liters
- 430 liters



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6. Agastya had a box with the dimensions  $(6 \times 3) \times 4$  and it was filled with footballs. Each ball took up a  $1 \times 1 \times 1$  space. How many footballs were in Agastya's box?

- 48
- 13
- 72
- 36

7. In the 2023 School Annual Athletics, Harish completed the 200-meter sprint in 19.32 seconds and in the other race he completed 100-meter sprint in 9.63 seconds. 1 point

Which of the below statement is correct?

- Harish took exactly half time in 100 -meter race as long as it took him to run the 200-meter.
- Harish took Less than half time in 100 -meter race as long as it took him to run the 200-meter.
- Harish took more than half time in 100 -meter race as long as it took him to run the 200-meter.

8. Gaurav weighed both of his pets. His parrot weighs 40 grams, and his cat weighs 700 grams. How many kilograms do his pets weigh together?

- 740 kg
- 0.74 kg
- 110 kg
- 7.40 kg



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9. Which of the following describes the value of the number 6.21?

- six hundred twenty-one hundredths
- six and twenty-one hundredths
- sixty and twenty one tenths
- six hundred twenty-one tenths

10. Hunar wants to visit Singapore. He found a plane ticket for ₹8,600. If Hunar saves ₹430 a week, how many weeks will it take him to save enough money to go to Singapore?

- 10
- 20
- 50
- 30

11. Mr. Amit is setting up chairs for a meeting. Each row has 14 chairs. 242 people are expected to come to the meeting. How many rows of chairs should he set up?

- 17
- 18
- 14
- 19



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12. Krish earns money by selling newspapers and taking tuition. Last month, he earned ₹1500. Krish earned 4 times as much tuition as he earned selling newspapers. How much money did he earn last month selling newspapers?

- ₹1500
- ₹375
- ₹300
- ₹1200

13. Is this equation true or false?

$$7 + 2 \times 3 = 18 \div 6 + 39$$

- True
- False

14.

Lakshay has 440 trees to plant. He wants to put the same number of trees in each row with no extra trees. How many rows could he make?

- 3
- 6
- 9
- 8





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15.

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Kiaan tried to evaluate the expression

$$21 \div 7 + 4 \times 5$$

Here is his work:

$$= 3 + 4 \times 5 \quad \text{Step 1}$$

$$= 7 \times 5 \quad \text{Step 2}$$

$$= 35 \quad \text{Step 3}$$

Is Kiaan 's work correct?

- Yes , Kiaan is correct
- No, Kiaan has made mistake in step 1, instead of dividing , he would have multiplied first
- No, Kiaan has made mistake in step 2, instead of adding numbers , he would have done multiplication first

16.

What is the prime factorization of 32?

- $2 \times 4 \times 4$
- $2 \times 16 \times 1$
- $2 \times 2 \times 2 \times 2 \times 2$
- $1 \times 4 \times 4$



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17. Choose two numbers from the options to complete the below sentence. 1 point

? and ? have a quotient of 9

6

24

54

60

3

Row 1

18. Which equation shows the associative property of multiplication?

$5 \times (3 \times 2) = (5 \times 3) \times 2$

$5 + 5 + 5 + 5 + 5 + 5 = 6 \times 5$

$(7 - 2) \times 3 = 7 \times 3 - 2 \times 3$

$4 \times 8 = 4 + 4 + 4 + 4$

19. Complete the multiplication sentence

$$3 \times \frac{3}{11} = \square \times \frac{1}{11}$$

6

9

1

0



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20. Anita is going on a picnic with her family. She wants to find the volume of the family's ice chest. Which expression should she use?



- $(3 \times 2) + 2$
- $3 \times 2 \times 2$
- $3 + 2 + 2$
- $(3 \times 2) - 2$





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## Logical Reasoning Ability

All questions are mandatory. Please note there is no negative marking:

Q 21: What will come next in the below series?

1 point



Option 1



Option 2



Option 3



Option 4



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Q 22. Complete the below series:

1, \_\_\_\_, 16, 64, 256, 1024

- 2
- 4
- 8
- 12

Q 23: Find out the odd pair?

- 2:4
- 4:8
- 6:18
- 16:32

Q 24: Neck is related to Tie, in the same way as Waist is related to\_\_?

- Watch
- Belt
- Ribbon
- Shirt



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Q 25: If 'Dust' is called 'air', 'air' is called 'water', 'water' is called 'tree', 'tree' is called 'sea'.

Then where do fish live?

- Air
- Sea
- Water
- Tree
- Dust

Q 26: Find the one word which cannot be formed by using the letters of the given word.

**CONSTRUCTIONS**

- SUCTION
- COINS
- CAUTION
- NOTION

Q 27: What will be the ones digit of the 4th number, if below numbers are arranged in ascending order?

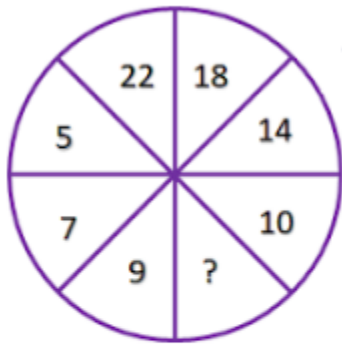
**517, 325, 639, 341, 592**

- 7
- 5
- 9
- 1
- 2



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Q 28: Find the missing Number.



- 6
- 8
- 12
- 11

Q 29: How many squares are there in the below picture?



- 3
- 4
- 5
- 6
- None of these



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Q 30: Rakesh is standing North to Ramesh and Ramesh is standing East to Gaurav. If Rakesh want to come to meet Gaurav, then in which direction he will move?

- North - West
- South - West
- North - East
- South - East

Q 31: If "TARGET" is written as "TEGRAT", then "397243" will be written as \_\_\_\_\_?

- 432973
- 342739
- 342793
- 348793

Q 32: Which picture is breaking the pattern.

1 point



- C
- D
- E
- F
- G





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Q 33: A watch reads 6:00. If the minute hand points towards the South, in which direction will the hour hand point?

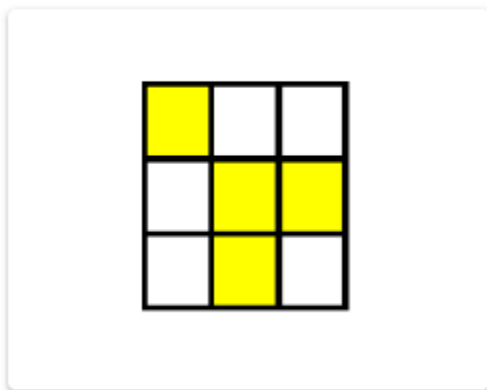
- East
- West
- South
- North

Q 34. Choose the missing term in the below series.  
AB, DEF, HIJK, ?, STUVWX

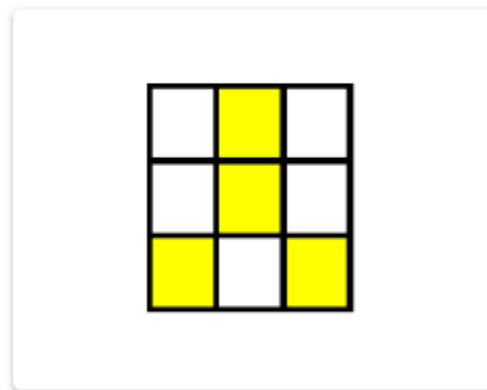
- LMNO
- LMNOP
- MNO PQ
- QRSTU

Q 35: Which of the following figures don't have a line of symmetry?

1 point



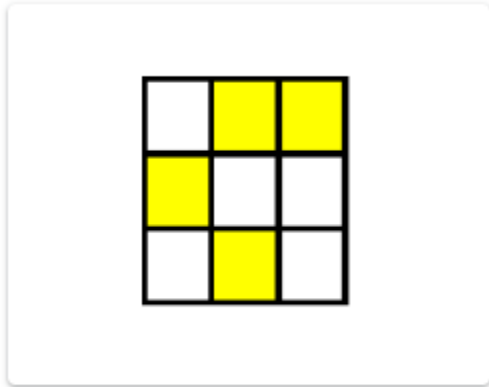
A



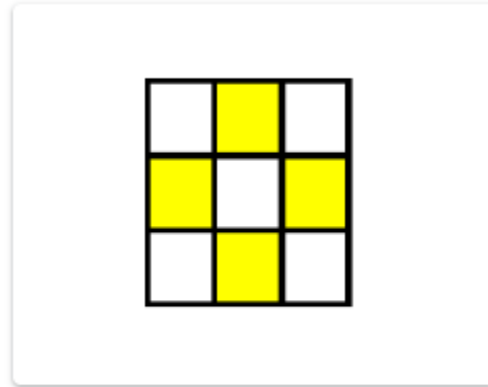
B



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c



d

Q 36: Which one is the mirror image of the below pic?

1 point



Option 1



Option 2



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Option 3



Option 4

Q 37: Four numbers are alike in some manner and the fifth one is different.  
Find that out.

- 19
- 15
- 11
- 13
- 17

Q38: If "+" and "x" signs are interchanged, which of the one following is correct?

- $3 + 3 \times 6 = 21$
- $3 + 5 \times 6 = 33$
- $6 + 5 \times 6 = 36$
- $5 + 6 \times 5 = 36$

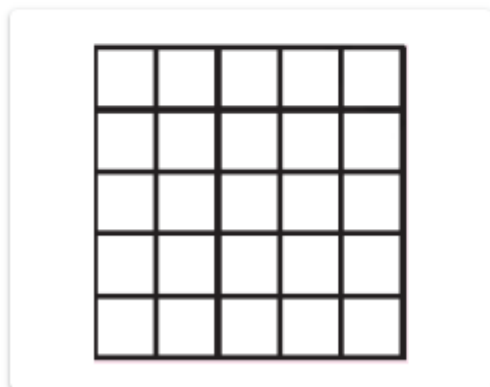


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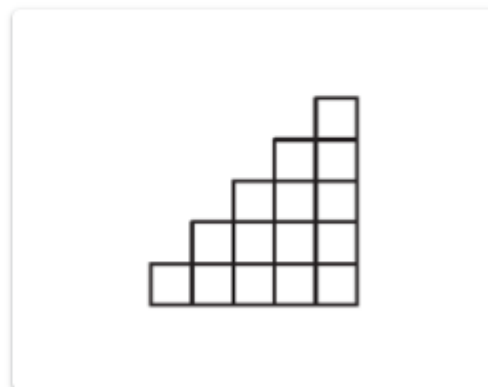
Q 39: Aadhya said, "The man sitting on bench is my mother's husband". How is the man related to Aadhya?

- Uncle
- Father
- Son
- Brother
- None of these

Q 40: Which one of the following is the correct side view of the below model? 1 point



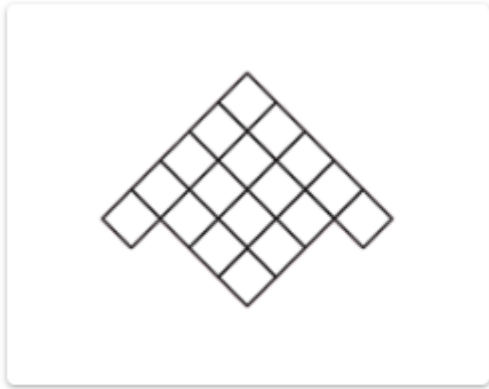
A



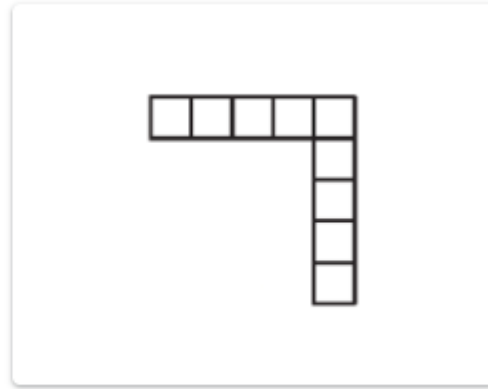
B



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C



D





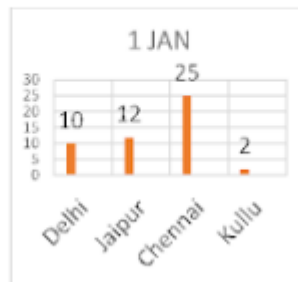
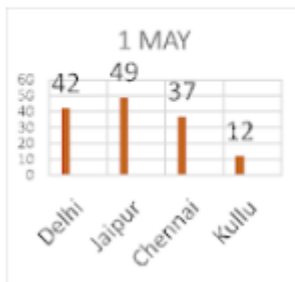
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## Real Life Problems

Questions from 41 to 45 are correlated:

Temperature of four cities are given below as on 1st May and 1st Jan. Based on chart info, Answer the questions from 41 to 45:

Temperature for Four Cities:



Q 41: Which city was hottest on 1st May?

- Delhi
- Kullu
- Chennai
- Jaipur

Q 42: Which city was coldest on 1st Jan?

- Delhi
- Kullu
- Chennai
- Jaipur



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Q 43: Which city shows the least temperature change between 1 May and 1 Jan?

- Delhi
- Kullu
- Chennai
- Jaipur

Q 44: Which city shows the highest temperature change between 1 May and 1 Jan?

- Delhi
- Kullu
- Chennai
- Jaipur

Q 45: If we take the average of high and low temperature of cities, then which city will have third highest average temperature?

- Kullu
- Jaipur
- Delhi
- Chennai

**Questions from 46 to 50 are correlated:**

A stadium has 8,400 seats. The stadium is divided into 12 equal sections: 2 premium sections and 10 standard sections. A seat at the premium section costs ₹600 per match. A seat at the standard section costs ₹450 per match.



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Q 46: How many seats are there in each section?

- 840
- 800
- 700
- 600

Q 47: If there are 35 seats in each row, how many rows are in each section?

- 7
- 20
- 35
- 15

Q 48: If all the seats in the Standard section are sold out for a match, how much will the stadium get from those ticket sales?

- ₹3150000
- ₹630000
- ₹3780000
- ₹315000

Q 49: For the night match on Thursday, 6390 tickets were sold. How many tickets were left?

- 610
- 2010
- 1400
- 710



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Q 50: There are 10 matches in each season. A season pass costs ₹4500. A season pass holder can go to all the games and have a seat in the premium section. How much can a person save by buying the season pass?

- ₹4500
- ₹1500
- ₹450
- ₹150