



National Analytical Brains Competition 2024

NAB Competition 2024- Grade 06

Mathematical Ability

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

1. How many thousands are there in two lacs?
(a) 100 (b) 1000 (c) 200 (d) None of these
2. What will be the product of the additive identity of 248 and the multiplicative identity of 248?
(a) 1 (b) -1 (c) 0 (d) None of these
3. A plant is 5 feet tall and grows 6 inches each year. In how many years will the plant reach a height of 14 feet?
(a) 10 years (b) 12 years (c) 15 years (d) 18 years
4. What is the smallest number that must be subtracted from 6571 so that the result is divisible by both 3 and 11?
(a) 2 (b) 5 (c) 7 (d) 4
5. Find the smallest 4-digit number that is divisible by 5, 7, and 12.
(a) 1050 (b) 1260 (c) 1680 (d) 2520
6. A number N is divisible by both 5 and 9. Which of the following could be the sum of the digits of N ?
(a) 11 (b) 15 (c) 13 (d) 18
7. Which of the given pairs of numbers are not co-prime?
(a) (7, 15) (b) (12, 49) (c) (18, 23) (d) (12, 21)



National Analytical Brains Competition 2024

8. The sum of two integers is (-26) . If one of them is 43, then find the other integer.
(a) -69 (b) 17 (c) -9 (d) -11
9. A salesman earns Rs. 75,000 in 3 months. How much will he earn in a year?
(a) Rs. 2,25,000 (b) Rs. 2,70,000 (c) Rs. 3,00,000 (d) None of these
10. Ahana has 5 packs of pencils, each containing 12 pencils, and 4 packs of erasers, each containing 6 erasers. Which of the following expressions cannot be used to find the total number of items she has?
(a) $5 \times 12 + 4 \times 6$ (b) $(5 + 4) \times (12 + 6)$
(c) $12 + 12 + 12 + 12 + 12 + 6 + 6 + 6 + 6$ (d) $4 \times 6 + 12 \times 5$
11. On a map, 1 centimeter represents 8 kilometers. If a district is represented on the map by a rectangle 12 cm by 9.5 cm, what is the area of the district in square kilometers?
(a) 8,064 sq. km (b) 9,120 sq. km (c) 7,296 sq. km (d) 6,432 sq. km
12. Evaluate: $45 - [38 - \{60 \div 3 - (6 - 9 \div 3) \div 3\}]$
(a) 105 (b) 26 (c) 102 (d) None of these
13. Which of the statements about the real-world situation is not true?
(a) A deposited ₹5000 in the bank can be represented as +5000
(b) A loss of 15 yards in the football match can be represented by -15
(c) A temperature of 30 below zero can be represented as -30
(d) A submarine diving 300 feet under water can be represented as +300
14. To join Club A, there is an initial fee of ₹2500 plus ₹300 per month. To join Club B, there is an initial fee of ₹1500 plus ₹400 per month. After how many months will the total cost of both clubs be the same?
(a) 8 months (b) 10 months (c) 12 months (d) 15 months

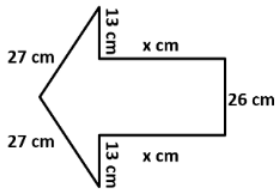


National Analytical Brains Competition 2024

15. If $P = (-8) \times 5 - 12 \div (-3) + 7$, what is the value of P?

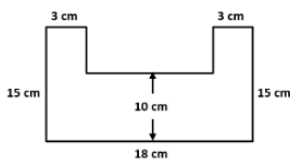
- (a) -31 (b) -29 (c) -41 (d) -37

16. Find the value of x in the given figure, if the perimeter of the figure is 200 cm.



- (a) 45 cm (b) 46 cm (c) 47 cm (d) 49 cm

17. What is the area of the given figure?



- (a) 200 sq. m. (b) 210 sq. m. (c) 220 sq. m. (d) 205 sq. m.

18. Which of the following can be the area of a square if the side length is a whole number?

- (a) 72 Sq. m. (b) 121 Sq. m. (c) 200 Sq. m. (d) 145 Sq. m.

19. The number of boys in a math class is three-fourths the number of girls in the same class. The total number of students in the class is at most 56. What is the greatest possible number of girls in the class?

- (a) 28 (b) 32 (c) 36 (d) 40

20. Find the ratio of 3 weeks to 2 days.

- (a) 3 : 2 (b) 21 : 2 (c) 3 : 48 (d) 2 : 3

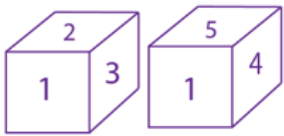


National Analytical Brains Competition 2024

Logical Reasoning:

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

21. Two positions of the same dice are given. Which of the following numbers will be opposite to 1?

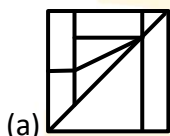


- (a) 2 (b) 3 (c) 6 (d) 4

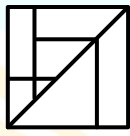
22. A, B, C, D, and E are five friends. A is shorter than B but taller than E. C is the tallest. D is shorter than B and taller than A. Who has two persons taller and two persons shorter than him/her?

- (a) A (b) B (c) C (d) D

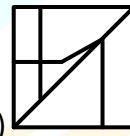
23. In which of the following figures is Fig.(X) exactly embedded as one of its parts?



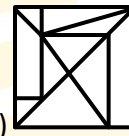
(a)



(b)



(c)



(d)

24. In the below question, a letter-number series is given with one or more terms missing as shown by (?). Choose the missing term out of the given alternatives.

D-4, F-6, H-8, J-10, ?, ?

- (a) K-12, M-13 (b) L-12, M-14 (c) L-12, N-14 (d) K-12, M-14

25. In a certain code language, '253' means 'books are old', '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?



National Analytical Brains Competition 2024

- (a) 2 (b) 4 (c) 5 (d) 6 (e) 9

26. If the word TERMINATION is coded as 12345671586, what should be the code for the word MOTION?

- (a) 438586 (b) 458586 (c) 481586 (d) 485186

27. Jatin leaves his house and walks 10 km toward North. He then turns left and walks 12 km more, then turns left to walk 10 km, and again turns left and walks 17 km more. How far is he from his home and in which direction?

- (a) 7 km East (b) 12 km East (c) 17 km East (d) 5 km East

28. In the following alphabets, which letter is eighth to the right of the fourteenth letter from the right end?

Z A B C D E F G H I J K L M N O P Q R S T U V W X Y A

- (a) E (b) R (c) U (d) D

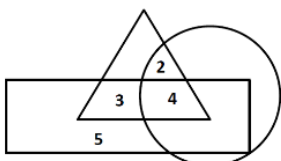
29. Ashok is the brother of Bani, Bani is the daughter of Chandni, and Deepak is the father of Ashok. Then, how is Chandni related to Deepak?

- (a) Husband (b) Wife (c) Granddaughter (d) Grandfather

30. If \times stands for 'Addition', $<$ stands for 'Subtraction', \div for 'Division', $>$ for 'Multiplication', $-$ for 'Equal to', $+$ for 'Greater than', and $=$ for 'Less than', which of the following is true?

- (a) $3 \times 4 > 2 - 9 + 3 < 3$ (b) $5 \times 3 < 7 \div 8 + 4 \times 1$
(c) $5 > 2 + 2 = 10 < 4 \times 8$ (d) $3 \times 2 < 4 \div 16 > 2 + 4$

31. In the given figure, if Triangle represents healthy people, Rectangle represents old persons, and Circle represents men, what is the number of those men who are healthy but not old?

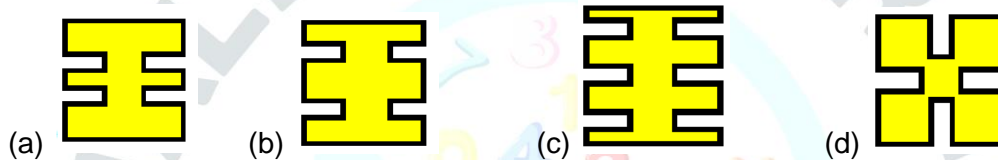
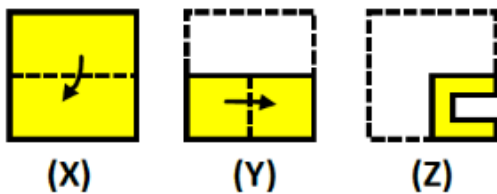




National Analytical Brains Competition 2024

- (a) 3 (b) 4 (c) 2 (d) 6

32. There are three forms X, Y, and Z of a sheet of paper. Figures X and Y respectively show the two consecutive folds of the sheet. And the figure Z shows the punch on the folded sheet. Choose one figure from the four options [a], [b], [c], and [d] that is similar to the unfolded form of the sheet.



33. In the below options, find which one is following the given pattern: Number of letters skipped in between adjacent letters in the series is two.

- (a) MPSVYBE (b) QSVYZCF (c) SVZCGJN (d) ZCGKMPR

34. In a certain code, FIRE is written as QHOE and MOVE as ZMWE. Following the same rule of coding, what should be the code for the word OVER?

- (a) MWED (b) MWEO (c) MWOE (d) MWZO

35. In a certain code language, 'put tir fin' means 'delicious juicy fruit', 'tie dip sig' means 'beautiful white lily', and 'sig lon fin' means 'lily and fruit'. Which of the following stands for "and" in that language?

- (a) lon (b) sig (c) fin (d) None of these

36. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.

10, 18, 28, 40, 54, 70, ?

- (a) 94 (b) 86 (c) 87 (d) 88



National Analytical Brains Competition 2024

37. In the below series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.

ac _ cab _ baca _ aba _ acac

- (a) aacb (b) acbc (c) babb (d) bcbb

38. Find the number which will replace the '?' mark.

9	12	5
54	?	35
12	15	14

- (a) 180 (b) 125 (c) 90 (d) 45

39. In the following question, find the odd one from the given alternatives.

- (a) Lake (b) Sea (c) River (d) Pool (e) Pond

40. If you count 17 letters in the English alphabet from the end and 14 letters from the beginning, which letter will appear exactly in the middle of the sequence thus formed?

- (a) K (b) L (c) M (d) N



National Analytical Brains Competition 2024

Daily Life Problem:

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

One Saturday morning, Vanshika went shopping with her friends, Amaira and Ashi. Vanshika had ₹500 to spend. First, she bought 2 books for ₹60 each, then a T-shirt for ₹150. Amaira bought three snacks for ₹30 each and spent ₹100 on a toy. Ashi, who had saved ₹400, bought a video game for ₹250. After shopping, the friends hired a cab and contribute ₹80 each as fare. On their way home, they discussed how much each had spent and calculated their remaining amounts.

41. How much did Vanshika spend on the books and T-shirt together?
(a) ₹210 (b) ₹270 (c) ₹300 (d) ₹350
42. If Amaira had bought an extra snack and spent an additional ₹50 on another toy, how much total money would she have spent?
(a) ₹290 (b) ₹230 (c) ₹270 (d) ₹300
43. How much did Amaira spend on snacks and the toy?
(a) ₹190 (b) ₹150 (c) ₹180 (d) ₹200
44. How much money did Amaira have left after spending on snacks and toys, if she started with ₹250?
(a) ₹50 (b) ₹60 (c) ₹70 (d) ₹80
45. If Vanshika decided not to buy the T-shirt and instead bought 3 books at the same price as the first book, how much would she have left after the purchase?
(a) ₹320 (b) ₹140 (c) ₹40 (d) ₹200
46. What percentage of her money did Vanshika have left after her shopping?
(a) 54% (b) 23% (c) 46% (d) 27%



National Analytical Brains Competition 2024

47. Vanshika originally had ₹500. If she gave Ashi ₹70 before buying anything, and then bought the books and T-shirt, how much would she have left after all her spending?
- (a) ₹50 (b) ₹150 (c) ₹160 (d) ₹80
48. If Vanshika had ₹500 and spent ₹80 on snacks, what fraction of her total money did she spend on snacks?
- (a) $\frac{4}{25}$ (b) $\frac{1}{4}$ (c) $\frac{25}{4}$ (d) $\frac{1}{8}$
49. If Ashi saved an extra ₹100 before shopping and bought two video games for ₹250 each, how much would she have left?
- (a) ₹50 (b) ₹150 (c) ₹100 (d) ₹0
50. If Amaira wanted to buy a fourth snack but still wanted to spend the same total amount of ₹190, how much would each snack need to cost?
- (a) ₹27.5 (b) ₹30.0 (c) ₹22.5 (d) ₹147.5