

LearnTheta - CAT 2024 Quant Mock Test 2**Duration: 40 Mins**

Q.1 An Orchard has 50 trees, each tree yielding 800 pears. For every additional tree planted in the orchard, the output per tree reduces by 10 pears. How many trees should be added to the existing orchard in order to maximise the total pear output?

Q. 2 A watch which gains uniformly is 5 min slow at 9 o'clock in the morning on Monday and it is 5 min 48 sec fast at 9 p.m on the following Monday. When was it correct?

- A. 8pm on Thursday
- B. 20 min past 8pm on Thursday
- C. 15 min past 8pm on Thursday
- D. 9pm on Thursday

Q.3 a and b are positive integers. If $a^4 + a^2b^2 + b^4 = 481$ and $ab = 12$, then what is the value of $a^2 - ab + b^2$

- A. 11
- B. 13
- C. 15
- D. 16

Q. 4 A batsman played 80 matches and scored 99 runs on average. His score in the last match was zero runs. How much should he have scored in the last match to have a final average of 100 in the end?

- A. 1
- B. 10
- C. 80
- D. 100

Q.5 What is the value of x, if $\sqrt{9 - 5x} = \sqrt{3 - x} + \frac{6}{\sqrt{3-x}}$

- A. 3
- B. -3
- C. -9/2
- D. both B and C

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Q. 6 A restaurant dilutes the beer with water and profits 9.09% even after selling the beer at the procurement price. How much water is there in 1L diluted beer?

- A. 83.33 mL
- B. 90.90mL
- C. 99.09mL
- D. can't be determined

Q.7 How many non negative pair of integers (m,n) exist such that $m^3 + n^3 = (m + n)^2$

- A. 3
- B. 4
- C. 5
- D. 6

Q.8 Cost price of 4 identical plants is equal to the selling price of 3 plants and the discount on 2 plants is equal to the profit on 1 plant. What is the percentage point difference between the profit and discount percentage?

- A. 16.67
- B. 21.11
- C. 22.22
- D. 23.33

Q.9 Solve for x if $x > 0$: $4^{2+4+6+\dots+2x} = (0.0625)^{36}$

- A. 6
- B. 7
- C. 8
- D. 9

Q. 10 Two friends, Mariya and Chhaya, live 12 kilometres apart. They start walking towards each other at the same time. Mariya flies a drone towards Chhaya at the start, which returns to Mariya upon reaching Chhaya. Find the total distance travelled by the drone if its speed is 15 Km/hr while the friends walk at 5 Km/h.

- A. 12 km
- B. 12.5 km
- C. 13.5 km
- D. 15 km

Q. 11. Aryan alone can do a piece of work in 6 days and Bhavish alone in 8 days. Aryan and Bhavish undertook to do it for Rs.3200. With the help of Charvik, they completed the work in 3 days. How much is to be paid to Charvik?

- A. 400
- B. 600
- C. 800
- D. 1000

Q.12 How many integer values satisfy the inequality: $||x - 4| - 2| < 3$

- A. 0
- B. 8
- C. 9
- D. 15

Q. 13 A helicopter covers the first 250 km at the rate of 100 km/hr, the second 250 km at 200 km/hr, the third 250 km at the rate of 300 km/hr and remaining at the rate of 400 km/hr. Find the average speed of the helicopter if the total distance covered is 1000km.

- A. 150
- B. 192
- C. 200
- D. 250

Q.14 How many real solutions exist for equation $|a - 3|^{3a^2 - 10a + 3} = 1$

- A. 0
- B. 1
- C. 2
- D. 3

Q. 15 A policy offers 5% compound interest compounded half yearly. Aman deposits Rs. 3200 each on 1st Apr and 1st Oct of a year. How much interest he would have gained at the end of the financial year:

- A. 240
- B. 242
- C. 243
- D. 244

Q.16 Rohan opened his Math book, and noticed that the product of the two pages in front of him was equal to 1122. What is the smaller number?

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Q. 17 The base of a triangle passes through a fixed point P(a,b) and its sides are respectively bisected at right angles by the lines $x+y=0$ and $x=9y$. If the locus of the third vertex is a circle, then find its equation

- A. $4x^2 + 4y^2 + (5a + 4b)x + (4a - 5b)y = 0$
- B. $4x^2 + 4y^2 - (5a - 4b)x + (4a + 5b)y = 0$
- C. $4x^2 + 4y^2 + (5a + 4b)x + (4a + 5b)y = 0$
- D. None

Q. 18 If a ping pong ball consistently bounces back $\frac{2}{3}$ of the height from which it is dropped, what fraction of its original height will the ball bounce in the 4th bounce after being dropped?

- A. $\frac{8}{27}$
- B. $\frac{12}{37}$
- C. $\frac{8}{343}$
- D. $\frac{16}{81}$

Q. 19 What is the ratio of the in-radius, circum-radius and ex-radius of an equilateral triangle?

- A. 1:2:5
- B. 1:3:5
- C. 1:2:3
- D. $1:\sqrt{2}:2$

Q. 20 Calculate the minimum expense for constructing a circular concrete road that surrounds a square park with a perimeter of 200 m, given that the road's width is $7\sqrt{2}$ m and the construction cost is Rs. 100 per square m?

- A. Rs. 1,40,800
- B. Rs. 2,50,800
- C. Rs. 2,81,600
- D. Rs. 4,70,800

Q. 21 Find sum of all positive integers up to 2000, which are divisible by 5 but not by 2?

- A. 40,200
- B. 20,200
- C. 2,20,000
- D. 2,00,000

Q. 22 In how many years approximately will 500 rupee become worth less than today's 100 rupee if inflation is rising at 10%, given $\log(5) = 0.69897$, $\log(1.1) = 0.04139$

- A. 10 years
- B. 15 years
- C. 16 years
- D. 17 years

Answers

1. 15
2. B
3. B
4. C
5. B
6. A
7. C
8. C
9. C
10. C
11. A
12. C
13. B
14. D
15. B
16. 33
17. A
18. D
19. C
20. B
21. D
22. D

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Please use the following table to calculate a tentative percentile based on your score. For every correct response, 3 points are awarded. Incorrect answers to multiple-choice questions result in a deduction of 1 point, whereas incorrect answers to non-multiple-choice questions do not affect the score.

Target Percentile	Score
99	26
90	17
80	13
70	10