# Free Mock Test

**Q 1.** The value of the series $1^2 + 2^2 + 3^2 + \ldots\ldots + 10^2 = 385$

What is the value of $2^2 + 4^2 + 6^2 + \ldots.. + 20^2$

1. 770
2. 190
3. 450
4. 340

**Q 2.** A college has students in 3 batches - X, Y and Z. In a certain, the average marks obtained by these batches are 72, 60 and 50 respectively. The average marks of batches A and B taken together is 69. If the ratio of the number of students in batches B and C is 6:7, what is the average score of all the three batches put together?

1. 64.7
2. 54.3
3. 39.9
4. 74

**Q 3.** A person was asked to divide the half of a certain number by 6 and the other half by 4 and then to add the two quantities so obtained. Instead of doing so the student divided the number by 5 and the result fell short by 4. The given number is

1. 620
2. 210
3. 360
4. 480

**Q 4.** Three years ago, the ratio of the ages of Apoorva and Maya was 8: 9 respectively. 3 years hence, the ratio of their ages will be 11:12 respectively. What is the present age of Apoorva?

1. 17
2. 19
3. 23
4. 27

**Q 5.** Find the value of $5^{(1/4)} \times (125)^{0.125}$

1. 2
2. 5
3. 10
4. 20

**Q 6.** If $\log_a b = 1/2$, $\log_b c = 1/3$, $\log_c a = k/5$, find the value of k.

1. 12
2. 19
3. 23
4. 30

**Q 7.** Find the value of

$[1 / \log_{xy} (XYZ) + 1 / \log_{yz} (XYZ) + 1 / \log_{zx} (XYZ)]$

1. 2
2. 4
3. 7
4. 9

**Q 8.** Ganesh went to the supermarket with a certain amount of money. With this money, he can buy either 50 bananas or 40 oranges. He retains 10% of the money for taxi fare. If he buys 20 oranges, the number of bananas he can buy is

1. 14
2. 27
3. 20
4. 17

**Q 9.** A 15 kg gas cylinder runs out for 120 hours when the small burner on the gas stove is fully opened while it runs for 90 hours when the larger burner on the gas stove is fully opened. Which of these values is the closest to the percentage difference in the usage of gas per hour, of the smaller burner over the larger burner?

1. 25

2. 20
3. 16
4. 19

**Directions (10 - 14):** Rearrange the given 5 sentences in a proper sequence so as to form a meaningful paragraph

1. Both the nations were navigating the Oceans, carrying cargo and passengers, traders and monks, commodities and sutras; they were sharing the naval architecture. Oceanic navigation is referred to in Indian literary sources including Jatakamala describing the observation of prevailing winds, landmarks, fauna and tides
2. Prime Minister of India and President of China meeting in Mahabalipuram exchanged mechanism for shaping future, unveiling dreams, deepening and strengthening relations, forging partnerships, establishing peace and prosperity with a collective approach.
3. They have opened fresh avenues of co-operation, friendship and harmony following the ideals of life passed on to us by sages looking at the world as one family and wishing well being for all.
4. Handshake by the two leaders will unite hearts and minds for the benefit of both the great nations. And on the other hand, it inspires us to revisit the past, the three millennia of culture and commerce, devoid of clashes or hegemonic attitudes, sharing the message of Buddha. It will result in an impact on the development of entire humanity.
5. The deeper the roots the higher the branches an old saying is appropriate for understanding the depth and height of relations between the two great nations of Asia. The depth of the roots of Indo-Chinese cultural and commercial relations, seen in time and space is an indicator of its future.

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**Q 10.** Which is the last statement?

1. 3
2. 2
3. 4
4. 5

**Q 11.** Which is the first statement?

1. 3
2. 1
3. 2
4. 4

**Q 12.** Which is the third sentence?

1. 1
2. 4
3. 2

4. 3

**Q 13.** Which is the fourth sentence?

1. 5
2. 3
3. 1
4. 2

**Q 14.** Which is the second sentence?

1. 1
2. 5
3. 4
4. 3

**Directions (15 - 19):** Fill in the blanks with the appropriate word.

One of Asia's oldest democracies may be in ------ (15) -----. Sri Lanka's presidential election next month is expected to bring to power another member of Rajapaksha family, whose ---- (16) ----- for authoritarianism, violence, and corruption is well known. While Sri Lanka's democracy survived the last test - an attempted constitutional coup by outgoing President Maithripala Sirisena a year ago - it may not survive Gotabaya presidency. Gotabaya, as he is popularly known, is the current frontrunner and previously served as Sri Lanka's defence chief under his older brother Mahinda Rajapaksha, Sirisena's ----predecessor.---- Mahinda's decade long tenure, which ended in 2015, was characterized by brazen ----(18)----- with the four Rajapaksha brothers controlling many government ministries and about 80% of total public spending. Mahinda's pro-China foreign policy allowed for the ----swift---expansion of Chinese influence in Sri Lanka.

**Q 15.**

1. Surety
2. Certainity
3. Safeness
4. Jeopardy

**Q 16.**

1. Loathing
2. Detestation
3. Affinity
4. Prejudice

**Q 17.**

1. Progeny
2. Predecessor
3. Posterity
4. Descendant

**Q 18.**

1. Nepotism
2. Non-Partisanship
3. Meritocracy
4. Even-handedness

**Q 19.**

1. Sluggish
2. Sedate
3. Loitering
4. Swift

**Q 20.** 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?

1. 3
2. 2
3. 5
4. 6

**Directions (21 - 24):** Read the following information carefully and answer the questions given below.

Rakesh Ahuja has 3 children - Saanvi, Vikram and Arni. Arni is married to Monisha, the eldest daughter of Mr and Mrs Sen. The Sens married their youngest daughter to the eldest son of Mr and Mrs Sharma, and they had two children named Advik and Shankar. The Sens have two more children, Roshan and Vatsala, both elder to Vedha. Sameer and Ajay are sons of Arni and Monisha. Rachana is the daughter of Advik.

**Q 21.** What is the surname of Rachana?

1. Sen
2. Ahuja
3. Sharma

4. Can’t be determined

**Q 22.** How is Sameer related to Monisha’s father?

1. Son
2. Father
3. Uncle
4. Grandson

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**Q 23.** What is the surname of Sameer?

1. Ahuja
2. Sharma
3. Sen
4. Can’t be determined

**Q 24.** How is Mrs Sen related to Arni?

1. Aunt
2. Mother in law
3. Mother
4. Can’t be determined

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**Q 25.** Ravi introduces Rohan as the son of the only brother of his fathers’ wife. How is Rohan related to Anil?

1. Cousin
2. Nephew
3. Uncle
4. Grandfather

**Answer Keys:**

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|---|---|---|---|---|
| **Q 1.** 1 | **Q 2.** 1 | **Q 3.** 4 | **Q 4.** 2 | **Q 5.** 2 |
| **Q 6.** 4 | **Q 7.** 1 | **Q 8.** 3 | **Q 9.** 1 | **Q 10.** 4 |
| **Q 11.** 3 | **Q 12.** 2 | **Q 13.**1 | **Q 14.** 4 | **Q 15.** 4 |
| **Q 16.** 3 | **Q 17.** 2 | **Q 18.** 1 | **Q 19.** 4 | **Q 20.** 2 |
| **Q 21.** 3 | **Q 22.** 4 | **Q 23.** 1 | **Q 24.** 2 | **Q 25.** 1 |

**Solution 1:**

$1^2 + 2^2 + 3^2 + \ldots\ldots + 10^2 = 385$

The above equation can be rewritten as

$2^2 ( 1^2 + 2^2 + 3^2 + \ldots\ldots + 10^2 )$

$= 2 \times 385$

$= 770$

**Solution 2:**

Let the number of students in batches B and C be 6x and 7x respectively, and the number of students in batch A be y.

$72 y + 60 \times 6x = 69 (6x + y)$

$72 y + 360x = 414 x + 69y$

$3y = 54x$

$Y = 18x$

Required average = $(72 \times 18x + 60 \times 6x + 50 \times 7x) / (18x + 6x + 7x)$

$= 64.7$

**Solution 3:**

Let the number be ‘a’

Then,

[ {(a / 2) / 6} + {(a / 2) / 4} ] - (a / 5) = 4

(10a + 15a - 24a) / 120 = 4

Hence, a = 4 × 120

= 480

**Solution 4:**

Let the age of Apoorvaa 3 years ago be 8x.

Let the age of Maya 3 year ago be 9x.

The present age of Apoorva = 8x + 3

The present age of Maya = 9x + 3

3 years hence the age of Apoorva = 8x + 3 + 3

3 years hence the age of Maya = 9x + 3 + 3

(8x + 3 + 3) / (9x + 3 + 3) = 11 / 12

8x + 6 / 9x + 6 = 11 / 12

96x + 72 = 99x + 66

3x = 6

Therefore, x = 2

The present age of Apoorva

= 8x + 3

= (8 × 2) + 3

= 16 + 3

= 19 years

**Solution 5:**

$= 5^{0.25} \times (5^3)^{0.25}$

$= 5^{0.25} \times 5^{0.75}$

$= 5^{0.25 + 0.75}$

$= 5^1$

**Solution 6:**

As per logarithm rules,

$\text{Log}_b a = \log a / \log b$

Hence we can write,

$\text{Log}_a b = \log b / \log a$

$\text{Log}_b c = \log c / \log b$

$\text{Log}_c a = \log a / \log c$

We can write,

$\text{Log}_a b \times \text{Log}_b c \times \text{Log}_c a = (1 / 2) \times (1 / 3) \times (k / 5)$

$(\log b / \log a) \times (\log c / \log b) \times (\log a / \log c) = (k / 30)$

$K / 30 = 1$

$K = 30$

**Solution 7:**

As per logarithm rules,

$1 / \text{Log}_a b = \log_b a$

$1 / \log_{xy} (XYZ) = \log_{xyz} xy$

$1 / \log_{yz} (XYZ) = \log_{xyz} (YZ)$

$1 / \log_{zx} (XYZ) = \log_{xyz} (ZX)$

$\log_{xyz} xy + \log_{xyz} YZ + \log_{xyz} ZX$

As per logarithm rules,

$\text{Log}_x a + \log_x b + \log_x c = \log_x (abc)$

$\log_{xyz} xy + \log_{xyz} YZ + \log_{xyz} ZX = \log_{xyz} ( xy \times YZ \times ZX)$

$= \log_{xyz} ( XYZ )^2$

As per logarithm rules,

$\text{Log}_y (x)^a = a \log_y x$

Hence, $\log_{xyz} ( XYZ )^2$

$= 2 \times \log_{xyz} ( XYZ )$

As per logarithm rules,

$\log_a (a ) = 1$

Hence, $\log_{xyz} ( XYZ ) = 1$

So,

$2 \times \log_{xyz} ( XYZ )$

$= 2 \times 1 = 2$

**Solution 8:**

Let the initial amount in hand be Rs ‘x’

Cost of 1 banana = x / 50

Cost of 1 orange = x / 40

Money left after paying taxi fare = 90% of x = (9/10) x

Money spent in buying 20 oranges = ( x / 40 ) * 20 = x / 2

Money left = 9x / 10 - x / 2

= 4x / 10

= 2x / 5

Number of bananas that can be bought

= (2x / 5) * (50 / x)

= 20

**Solution 9:**

Consumption of gas 1 hour due to usage of the large burner

= 15 / 90 = 1 / 6 kg

Consumption of gas in 1 hour due to usage of a small burner

= 15 / 120 = 1 / 8 kg

Difference between consumption

= (1 / 6) - (1 / 8)

= 2/ 48 kg

= 1 / 24 Kg

Required percentage difference

= (1 / 24) × 6 × 100) %

= ( 1 / 4 ) %

= 25 %

**Solution 20:**

Books are old - 253

Buy good books - 378

In the above 2 statements, the word books are common and number 3 is common.

Hence books is coded as 3.

Books are old - 253

Man is old - 546

In the above 2 statements

In the above 2 statements, the word ‘old’ is common and the number ‘5’ is common.

Hence the word old is coded as 5.

Hence in the sentence Books are old - 253, the remaining word is are and the remaining number is 2.

Hence the code for are is 2.

**Solution 21:**

Rachana is the daughter of Advik who is, therefore, the eldest son of Sharma’s and married to Vedha, the youngest daughter of the Sens. So, the surname of Rachana is Sharma.

**Solution 22:**

Sameer is the son of Arni who is the son of Rakesh. So, Sameer is the grandson of Monisha’s father

**Solution 23:**

Sameer is the son of Arni who is the son of Rakesh Ahuja. So surname of Sameer is Ahuja.

**Solution 24:**

Arni is married to Monisha who is the daughter of Mrs Sen. So Mrs Sen is the mother in law of Arni

**Solution 25:**

Father’s wife means mother

Mother’s brother means uncle of Ravi

Uncle’s son is nothing but Cousin.