“Quantitative Reasoning – The only place where people can buy 64 watermelons and no one wonders why…”

This test is a measure of your basic mathematical skills, understanding of elementary concepts and the ability to reason quantitatively to model and solve problems.

1. Say, the average of two numbers is equal to one of them. Then, what can be said about them?

A. They are equal
B. The number that is equal to the average is the Greater number
C. The number that is equal to the average is the smaller number
D. Information Insufficient to decide

2. Tyra runs at 10kph and completes the track in 151.2 minutes.
   Quantity A: The length of the track.
   Quantity B: 15 miles

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

3. Quantity A: $\tan^2\alpha+\cot^2\alpha+2$
   Quantity B: $\sec^2\alpha.\text{cosec}^2\alpha$

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

4. Quantity A: $-x^3-x+1$
   Quantity B: x^3+x+1

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

5. Ram moves 6m in the south and 8m in the east.
   Quantity A: His distance from the starting point.
   Quantity B: Atomic No of Oxygen*$\sin^2(45^o)$

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

6. Arvind had a farm of sheep. He picked out 20 sheep randomly one day and fleeced them. The next day, he picked out another 30 sheep randomly and found that 2 of them are fleeced.
   Quantity A: Estimated Number of Sheep in his farm.
   Quantity B: 600 sheep

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

7. Say Fun(a,b) = a*(a+b)
   Find Fun (Fun (3, 2), 3)

A. 270
B. 340
C. 240
D. 120

8. Say Fun(a,b) = a*(a+b)
   Find Fun (Fun (3, 2), x) = 240

A. 1
B. 2
C. 3
D. 4

9. Say Fun(a,b) = a*(a+b)
   Find Fun (Fun (1, x), x) = 4
   If the possible values of x are c, d, find 1/c+1/d

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

10. Quantity A: 7t+4t+5
    Quantity B: 8t-9t+11t+3

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

11. A fruit mix contains 10% Oranges and 90% Grapes. It costs 5% more than pure Oranges.
    Quantity A: Cost of Oranges
    Quantity B: Cost of Grapes

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

12. If a= $\log_{\sin 30deg}\cos 60^0$, b= $\log_{2\text{-sqrt}(3)}2+\text{sqrt}(3)$
    Quantity A: a+b
    Quantity B: a*b

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

13. $7<A<9$
    $8<B<10$
    $9<C<11$
    Quantity A: A+B+C
    Quantity B: 27

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

14. How many multiples of 16 are there between 100 and 1000?

    A. 55
    B. 56
    C. 57
    D. 58

15. The LCM of two numbers is 588 and their GCF is 28. One of the numbers is an odd number and also a perfect cube.

    Quantity A: Odd Number of the two Numbers

    Quantity B: Even Number of the two Numbers

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

16. The angle between the minute hand and the hour hand of a clock when the time is 4.20 is

A. 10deg
B. 5deg
C. 0deg
D. 1deg

17. A watch loses 5 min every hour and was set right at 9 a.m. on Monday. When will it show correct time again?

A. Sunday
B. Monday
C. Saturday
D. Friday

18. A Pizza shop sells two types of Pizzas.
Pizza A: Has a diameter of 40cm
Pizza B: Has a diameter of 80 cm but costs twice that of Pizza A
In terms of cost effectiveness and size, which is true?

A. Pizza A is better
B. Pizza B is better
C. Data is not sufficient
D. Each of the two pizzas are equally good

19. Ram scored 84, 67, 73, 45, 69, 92, and 87 in his tests. His teacher decides to drop his highest and lowest scores for calculating his average. Is this going to be good for Ram?

A. Yes
B. No
C. Can’t say
D. It doesn’t matter

20. The average of 20 numbers is zero. Of them, how many of them may be greater than zero, at the most?

A. 1
B. 20
C. 0
D. 19

21. The captain of a cricket team of 11 members is 26 years old and the wicket keeper is 3 years older. If the ages of these two are excluded, the average age of the remaining

players is one year less than the average age of the whole team. Find out the average age of the team.

A. 23
B. 20
C. 24
D. 21

22. A is 1/10% of B which is 10,000 % of C. Which is a true statement?

A. A=0.01C
B. A=0.1C
C. A=C
D. A=0.001C

23. If a=log(sqrt(x))/log(x), which is true ?

A. a changes with x
B. a is a constant and its value is 0
C. a is a constant and its value is 1/2
D. Need more data

24. Is $\log_x x = 1$ if $x<=0$

A. Yes
B. No
C. Yes for x=0 but not x<0
D. None of the above

25. Kiran starts a shop of his own but being a fan of the barter system, he does business using the following conversion.
10 mangoes = 2 Guava
1 Guava = 2 Peach
4 Peach = 1 Apple

On the basis of the above rates, to buy an apple, how many mangoes should I give Kiran?

A. 4
B. 8
C. 10
D. 12

Read the following passage.

Football is one of the most popular games played in the world. The FIFA World Cup 2014 held in Brazil was one of the most popular World Cups with Germany lifting the trophy. The teams were divided into 8 groups of 4 teams each. The stages of the tournament are as follows.

1. Group Stage
2. Pre-Quarterfinals (Round of 16)
3. Quarterfinals
4. Semi-finals
5. Final
6. Third Place Finish

In the group stage, each team played against the other 3 and the top two teams of each group made the knockouts. From stage 2, all the games were KO's with the winner taking all. One extra match was played to determine who finished 3rd. Final match was played between Germany and Argentina with Germany winning it 1-0 on the back of a Mario Gotze goal. The holders Spain were surprisingly knocked out in the Group Stage. The tournament though was a sordid affair as only 171 goals were scored, considerably lower than the 2010 edition. The host nation finished 4th losing 1-7 to Germany in the semi-finals and 0-3 to Netherlands in the 3rd place playoff.

Answer the following.

26. How many matches were played in the Group Stage?

A. 36
B. 48
C. 52
D. 64

27. What were the average goals scored per match in the tournament?

A. 2.67
B. 2.71
C. 3.56
D. 3.00

28. How many games did Brazil play?

A. 4
B. 5
C. 6
D. 7

29. $(\log_3 4)\,(\log_4 5)\,(\log_5 6)\,(\log_6 7)\,(\log_7 8)\,(\log_8 9)\,(\log_9 9) = ?$

A. 4
B. 0
C. 2
D. 1

30. In a deck of 52 cards, there are 13 cards of spades. If I remove one card of spades and one card of hearts, what percent of the remaining cards are spades?

A. 22
B. 23
C. 24
D. 25

31. Find the odd one out of the following numbers.
187, 275, 374, 912, 891, 792

A. 187
B. 374
C. 912
D. 891

32. Using the five digits 2, 4,6,8,1 how many five digit numbers greater than 40,000 can be formed where none of the digits are repeated?

A. 24
B. 48
C. 72
D. 96

33. Find the odd one out.
1, 8, 27, 125, 196, 343, 512

A. 8
B. 125
C. 196
D. 512

34. Fill in the blank.
2, 10, 26, 50, 82, 122, 170, ?

A. 196
B. 226
C. 216
D. 256

35. This is an interesting problem. A train compartment has 1000 seats. The first passenger to board the train loses his ticket and so sits in a random seat. The next passengers take their own seat if available else they sit randomly. What is the probability that the last passenger sits in his own assigned seat? (Hint: The math is not tedious!! Just simple logic!!! Test it out for small numbers and see if you can get a pattern)

A. ½
B. 1/3
C. ¼
D. 2/3

36. If 3*sqrt(5)+sqrt(125)=a, then what is sqrt(80)+16*sqrt(5)=

A. 2a
B. 2.5a
C. 3a
D. 4a

37. What is the smallest number to be multiplied to 3600 to make it a perfect cube?

A. 60
B. 110
C. 250
D. 450

38. A mansion has 19 rooms that can accommodate a total of 84 people. Some of the rooms can accommodate 4 people and the others can accommodate 5. How many rooms can accommodate 4 people?

A. 7
B. 8
C. 11
D. 10

Read the following and the answer the Questions below.

Sita: The Warrior of Mithila released recently by Amish has been an instant bestseller. It has a pricing of Rs 195 at present but the marketing specialists claim that if they reduce the price by Rs 25, the sales would double. The sales at present are 875 copies per day.

39. What is the relationship between sales of the book and the price?

A. Linear
B. Quadratic
C. Cubic
D. Hyperbolic

40. If the relationship is linear, what is the slope?

A. The relationship is Quadratic
B. The relationship is Cubic
C. The relationship is Hyperbolic
D. -35

41. If the relationship is hyperbolic, what is c (as in xy=c^2)?

A. The relationship is Quadratic
B. The relationship is Cubic
C. The relationship is Linear
D. 413

42. If x^2/3600 = 60/x, find x?

A. 60
B. 120
C. 240
D. 600

43. What is the square root of 8+4sqrt(3)?

A. 2*(sqrt(5)+sqrt(3))
B. Sqrt(5)+sqrt(3)
C. Sqrt(2)+sqrt(6)
D. 2*(sqrt(2)+sqrt(6))

44. In a group of 4 boys and 6 girls, four children are to be selected. In how many different ways can they be selected such that at least one girl should be there?

A. 159
B. 209
C. 201
D. 212

45. From a point K on a level ground, the angle of elevation of the top tower is 45º. If the tower is 200 m high, the distance of point P from the foot of the tower is:

A. 200
B. 400
C. 346
D. 312

46. If C=x% of y and D = y%x, then
Quantity A: C
Quantity B: D

A. Quantity A is greater.
B. Quantity B is greater.
C. The two Quantities are equal.
D. The relationship cannot be determined from the information given.

47. The population of a town increased from 1, 75,000 to 2, 45,000 in a decade. What is the average percent increase of population per year?

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

48. If a and b are positive integers and sqrt (a^6*b^4)=108, what is the value of a+b?

A. 4
B. 5
C. 7
D. 8

49. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively. If they cross each other in 22 seconds, what is the ratio of their speeds?

A. 1:1
B. Data Insufficient
C. 3:2

D. 2:3

50. Ram is able to do a piece of work in 15 days and Lakshman can do the same work in 20 days. If they can work together for 4 days, what is the fraction of work left?

A. 8/15
B. 7/15
C. 11/15
D. 2/11

Key

1. A
2. A
3. C
4. B
5. A
6. B
7. A
8. A
9. A
10. D
11. B
12. A
13. D
14. B
15. A
16. A
17. A
18. B
19. A
20. B
21. A
22. B
23. C
24. B
25. C
26. B
27. B
28. D
29. C
30. C
31. C
32. C

33. C
34. B
35. A
36. B
37. A
38. C
39. A
40. D
41. C
42. A
43. C
44. B
45. A
46. C
47. A
48. B
49. A
50. A