

Math Paper Test 3

1. There are two non-zero integers A and B and (A ≠ B).

Quantity I: What is the value of (A - B) if $A^2 + A = B^2 + B$?

Quantity II: What is the value of $A^3 + A^2 + A$ if $A + (1/A) = -1$?

A.Quantity I ≤ Quantity II **B.**Quantity I > Quantity II **C.**Quantity I ≥ Quantity II **D.**Quantity I < Quantity II
E.Quantity I = Quantity II or relationship can't be determined

2. In the following question, two statements numbered I and II are given. On solving them we get two quantities, quantity I and quantity II respectively. Solve for both the quantities and choose the correct option. Quantity I: Average weight of 30 boys in a class is 2 kg more than the average weight of 20 girls in same class. If the average weight of all students of same class is 35 kg, then find the average weight of all girls in kg. **Quantity II:** Average of four numbers is 41 and sum of smallest and largest number is 75. If the second smallest number is 5 less than second largest number, then what will be the second smallest number?
A.Quantity I < Quantity II **B.**Quantity I > Quantity II **C.**Quantity I = Quantity II **D.**Quantity I ≤ Quantity II **E.**Quantity I ≥ Quantity II

3. A shopkeeper promises to give discount of 20% on cost price while selling rice to a customer. He still earns a profit of 14 (2/7)% using a faulty weight, then how much less rice he gave to customer if customer wants to purchase 4.5 kg of rice?

A.1.2 kg **B.**1.5 kg **C.**1 kg **D.**1.35 kg **E.**0.9 kg

Directions : Study the data carefully and answer the following questions:

Below table shows the average number of students who enrolled in five courses in a university in 2018 and that in 2019, percentage of students who enrolled in five courses in 2019 out of total number of students enrolled in 2018 and 2019 together, the number of students who enrolled in five courses in 2019 as a percentage of the number of students who enrolled in five courses in 2020:

	The average number of students who enrolled in 2018 and that in 2019	The percentage of students who enrolled in 2019 out of total number of students enrolled in 2018 and 2019 together	The number of students who enrolled 2019 as a percentage of the number of students who enrolled in 2020
Course A	400	40%	80%
Course B	450	60%	75%
Course C	375	56%	150%
Course D	500	66%	75%
Course E	240	75%	90%

4. What is the ratio of number of students who enrolled in course B and C in 2018 to the number of students who enrolled in course D and E in 2019?

A.23: 34 **B.**22: 31 **C.**24: 37 **D.**25: 24 **E.**21: 34

5. If number of students who enrolled in course N and M in 2020 are 25% and 20% more than that of enrolled in course A and B, respectively in same year, then what is the total number of students who enrolled in course N and M together in 2020?

A.1432 **B.**1224 **C.**1364 **D.**1542 **E.**1122

6. What is the difference between the number of students who enrolled in course C and D in 2019 and the number of students who enrolled in course A and E in 2018?

A.500 **B.**440 **C.**420 **D.**480 **E.**400

7. If number of students who enrolled in course C and D in 2021 are 60% and 25% less than that of in previous year, respectively, then what is total number of students who enrolled in course C and D in 2021?

A.772 **B.**674 **C.**892 **D.**764 **E.**668

8. In the following question, read the given statement and compare the Quantity I and Quantity II on its basis. (Only quantity is to be considered)

Length of a rectangle is 35 cm more than the radius of a circle. Area of the circle is 616 cm² and perimeter of the rectangle is 112 cm.

Quantity I: If length of the rectangle is P% more than the radius of the circle, then the value of P?

Quantity II: Find the difference between the area of rectangle and that of the circle in cm².

A.Quantity I > Quantity II **B.**Quantity I < Quantity II **C.**Quantity I ≥ Quantity II **D.**Quantity I ≤ Quantity II **E.**Quantity I = Quantity II or relation can't be determined

9. After five years, A's age will be 10.5 years less than 2.5 times of C's age. Three years ago, the ratio of age of A and C is 3: 1. If B is three times the age of C, then what is the present age of B?

A.16 years **B.**21 years **C.**20 years **D.**18 years **E.**15 years

10. A starts 12 minutes after B for a place 50 km away. B on reaching the destination, immediately comes back and after walking 10 km meets A. The speed of A and B is 'p' km/h and 'q' km/h respectively. Which of the following can be the values of p and q in the same order?

I: 30, 40 **II:** 40, 50 **III:** 50, 60

A.Only I **B.**Only II **C.**Only III **D.**Both II and III **E.**None of them

11. Amit, Ajay and Nitesh started working together. They worked for 30 days and completed 50% of the work after which Ajay left the work. Amit and Nitesh continued working together for the next 30 days and completed 72% of the remaining work and then Nitesh alone complete the remaining work in 20 days. What is the ratio of efficiencies of Amit, Ajay and Nitesh respectively?

A.15: 21: 14 **B.**14: 14: 22 **C.**12: 18: 20 **D.**15: 14: 21 **E.**18: 14: 18

12. A, B, C and D are four salesmen. In the first month they received a commission of Rs. 3200 from their company and divided it in the ratio of 2 : 3 : 4 : 7. In the second month the commission doubled, the amount was divided in the ratio 3 : 4 : 5 : 4. In the third month the commission tripled when compared to the first month and they shared it in the ratio of 4 : 7 : 3 : 2 and in the fourth month the commission became half of the previous month and they shared it in the ratio of 4 : 3 : 5 : 4. What was the average monthly earning of C over the period?

A.Rs. 1,525 **B.**Rs. 2,552 **C.**Rs. 1,600 **D.**Rs. 1,725 **E.**None of these

13. Preety lent a certain sum of money at the rate of 20% per annum compounded annually. If total amount received by her at the end of third year is Rs. 25920, then what will be the simple interest received by her at the end of fourth year on the same rate of interest and same principal?

A.Rs. 15000 **B.**Rs. 12000 **C.**Rs. 16000 **D.**Rs. 14000 **E.**Rs. 9000

14. 135 candies were distributed among 4 children P, Q, R and S such that number of candies got by P and Q together is 5/3 of number of candies got by R and number of candies got by S is 1/3 of number of candies got by P. If Q got 30 candies, then the number of candies P and R got-

A.50 **B.**90 **C.**75 **D.**105 **E.**60

15. Each question below is followed by two statements I and II. You have to determine whether the data given in the statement is sufficient for answering the question.

Bag A contains 3 red, some blue and some white balls and bag B contains 6 red, 5 green and some yellow balls. Find the product of the probabilities of drawing two red balls from each bag.

Statement I: Probability of drawing one blue ball from bag A is 1/3.

Statement II: Probability of drawing one red ball from bag B is 1/3.

A.the statement I alone is sufficient to answer the question, but the statement II alone is not sufficient.

B.the statement II alone is sufficient to answer the question, but the statement I alone is not sufficient.

C.both statements I and II together are needed to answer the question.

D.either the statements I alone or statement II alone is sufficient to answer the question

E.if you cannot get the answer from the statements I and II together, but need even more data.

16. In the following question, the question is followed by two statements. Read all the statements carefully and find that which of the following statement(s) is/are sufficient to answer the question.

What is the rate at which the interest is paid by Simaran if she borrowed Rs. 6000 from his friend?

Statement I: Simaran paid Rs. 3600 as simple interest on borrowed sum after four years.

Statement II: Simaran paid Rs. 892.27 more as compound interest than as simple interest on borrowed sum at same rate.

A.If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

B.If the data in both statements I and II together are necessary to answer the question.

C.If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

D.If the data given in both statements I and II together are not sufficient to answer the question.

E.If the data either in statement I alone or in statement II alone is sufficient to answer the question.

17. Each problem consists of a question followed by 2 statements. Decide whether the data in the statements are sufficient to answer the question. Choose the option accordingly.

What is the speed of the stream?

I. The ratio of the effective speed of the boat during downstream journey to that during upstream journey is 13:3

II. The boat takes 16 hrs to complete a round trip, going 195 km in each direction.

A.Statement I alone is sufficient, but Statement II alone is not sufficient to answer the question.

B.Statement II alone is sufficient, but Statement I alone is not sufficient to answer the question.

C.Both statements taken together are sufficient to answer the question, but neither of the statement alone is sufficient. D.Either statement alone is sufficient.

E.Both statements together are not sufficient to answer the question.

Directions : Study the information given below and answer the following questions:

The following data is given regarding number of candidates who attended SSC CGL exam in two shifts from three centers (M, N and K) of Bengaluru. The total number of candidates who attended the exam in two shifts from the given three centers of Bengaluru are 4500. 33(1/3)% of total number of candidates attended the SSC CGL exam in two shifts from center N. The respective ratio of number of candidates who attended the exam in Shift 1 to shift 2 from center M is 11: 15 and The ratio of number of candidates who attended the exam in Shift 1 to shift 2 from center K is 9: 25 respectively and 10% of total number of candidates attended the exam from center K in shift 1. Number of candidates who attended the exam in shift 2 from center N is 650.

18. What is the respective ratio of number of candidates who attended exam in shift 2 from center M to the number of candidates who attended exam in shift 1 from center K?

A.5: 4 B.5: 2 C.5: 3 D.4: 5 E.3: 7

19. What is the average number of candidates who attended exam in shift 2 from center N and K together?

A.1050 B.850 C.750 D.950 E.1150

20. The number of candidates who attended exam in shift 1 from center N is what percentage of the number of candidates who attended exam in shift 2 from center K?

A.46% B.56% C.68% D.66% E.62%

21. What is the difference between the number of candidates who attended the exam in shift 1 from center M and K?

A.300 B.250 C.150 D.200 E.100

22. If the ratio of male to female candidates who attended the exam in shift 1 from Center N is 11: 6, then how many male candidates attended exam in shift 1 from N?

A.500 B.650 C.450 D.550 E.600

23. Amrish and Bikash invested Rs 2400 and Rs 4000 in a partnership. Rs 8260 is to be provided to Amrish out of the profit and remaining profit will be distributed amongst them in ratio of their investments. If the profit is Rs 72,260 what is the money earned by Amrish?

A.Rs 32,260 B.Rs 30,840 C.Rs 33,460 D.Rs 34,680 E.Rs 32,880

24. What approximate value should come in place of (?) in the expression given below?

$4.787 \times ? = (10126.22 - 8100.98)^{1/2} - 124^{1/3}$

A.5 B.2 C.10 D.15 E.8

25. What approximate value should come in place of question mark?

$148.12\% \text{ of } (1049.94 \div \sqrt[3]{2743.86}) - 125.07\% \text{ of } ? = 20.89$

A.84 B.72 C.50 D.65 E.99

26. What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value.)

$9.93\% \text{ of } 560.11 + \sqrt{324.06} = 49.06 + ?$

A.60 B.46 C.-45 D.39 E.25

27. What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value.)

$5782.02 \div 98.06 \times 42.06 = ? + 9.06$

A.2454 B.2484 C.2544 D.2469 E.2574

28. What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value.)

$30.11\% \text{ of } 2090.03 + \sqrt{80.91} = 452.02 + ?$

A.142 B.184 C.170 D.177 E.198

29. What should come in place of '?' in the following series?

2.6, 6.6, -2.4, 13.6, -11.4, ?

A.24.6 B.24.8 C.23.8 D.22.8 E.25.2

30. What will come in place of the question mark (?) in the following series?

231, 246, 223, 253, 217, ?

A.258 B.145 C.289 D.320 E.295

31. Find the missing number in the series below.

23, 90, 224, 425, 693, ?

A.1028 B.1039 C.1045 D.1056 E.1075

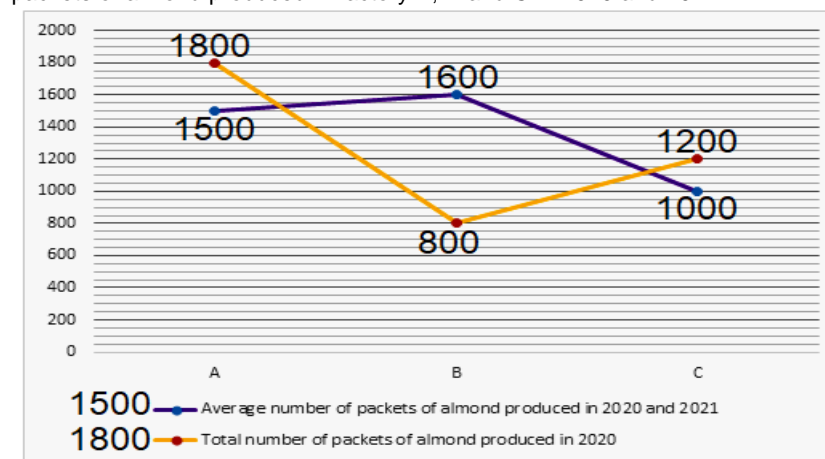
32. Find the next term in the series.

44, 56, 86, 142, 274, ?

A.445 B.456 C.468 D.435 E.438

Directions : Read the data carefully and answer the following questions.

The following line graph shows average number of packets of almond produced and total number of packets of almond produced in factory A, B and C in 2020 and 2021.



The following table shows total number of packets of Roasted almond produced in 2020 and 2021.

Factory	Total number of packets of Roasted almond produced in 2020	Total number of packets of Roasted almond produced in 2021
A	M	N - 200
B	M-100	N + 500
C	400	
Total	2N - 500	2650

Note: 1) Total number of packets of almond = Total number of packets of Roasted almond + Total number of packets of Chocolate coated almond

2) Ratio between total number of packets of Roasted almond and total number of packets of Chocolate coated almond is 7:9 respectively produced in factory C in 2021.

33. Find the ratio between total number of packets of Roasted almond produced by company B and C together in 2020 and total number of packets of Chocolate coated almond produced by company B together in 2021.

A.2:3 B.1:1 C.4:5 D.3:4 E.1:2

34. Find the sum of total number of packets of Chocolate coated almond produced by company A in 2020 and 2021 together.

A.2500 B.1800 C.1600 D.1300 E.2000

35. If total number of packets of Chocolate coated almond produced by company D in 2020 is 40% of total number of packets of almond produced by company B in 2021 then find the average of total number of packets of Chocolate coated almond produced by company A and D together in 2020.

A.1690 B.1080 C.2020 D.1250 E.1500

36. Find the difference between total number of packets of Roasted almond produced by C in 2021 and total number of packets of Chocolate coated almond produced by company A in 2020.

A.1000 B.970 C.600 D.850 E.900

37. If total number of packets of almond produced by company B in 2019 was 20% less than total number of packets of almond produced by company B in 2020 and 2021 together then find total number of packets of almond produced by company B in 2019.

A.2560 B.4500 C.1860 D.3500 E.3000

38. Total number of packets of almond produced by company A in 2020 and 2021 together is what percent more than total number of packets of almond produced by company B in 2021?

A.48% B.10% C.60% D.35% E.25%

39. Cost price of type A rice is Rs.45 per kg, type A rice and type B rice are mixed in the ratio 4: 1 to form a mixture. This mixture is sold at Rs.55.2 per kg and 15% profit percent is earned, then what is the per kg cost of type B rice?

A.Rs.70 B.Rs.50 C.Rs.60 D.Rs.80 E.Rs.75

40. A rectangular floor of length and breadth 20 m and 15 m respectively is covered by grey and white marbles. White marbles are used in 5 m width in all sides from the outer surface of the floor and for remaining part, grey marbles are used. Find the total expenditure if grey marble costs Rs.80 per sq.m and white marble costs Rs.100 per sq.m and cost of placing the marbles is Rs.10 per sq.m.

A.Rs.40000 B.Rs.36540 C.Rs.32000 D.Rs.28500 E.None of these

1. e

Solution

Quantity I:

$$A^2 + A = B^2 + B$$

$$(A + 1/2)^2 - 1/4 = (B + 1/2)^2 - 1/4$$

$$(A + 1/2)^2 = (B + 1/2)^2$$

$$(A + 1/2)^2 - (B + 1/2)^2 = 0$$

Solving above equation,

$$A + B = 1/4$$

$$A - B = 0$$

$$\text{Value of } (A - B) = 0$$

Quantity II:

$$A + (1/A) = -1$$

$$A^2 + 1 = -A$$

$$A^2 + A = -1$$

$$\text{Value of } A^3 + A^2 + A$$

$$A(A^2 + A + 1)$$

$$A(-1 + 1)$$

$$A * 0$$

$$= 0$$

Hence, Quantity I = Quantity II

2. a

Solution

From quantity I: Average weight of 30 boys in a class is 2 kg more than the average weight of 20 girls in same class.

Let average weight of boys = a

Then, average weight of girls = a - 2

Total weight of boys = 30 * a

Total weight of girls = 20 * (a - 2)

It is given that average weight of all students of same class is 35 kg. Then,

Total weight of all students in class = (30 + 20) * 35 = 1750

Then, 30 * a + 20 * (a - 2) = 1750

a = 35.8 kg

And, a - 2 = 35.8 - 2 = 33.8 kg

Therefore, quantity I = 33.8

From quantity II: Average of four numbers is 41 and sum of smallest and largest number is 75 and second smallest number is 5 less than second largest number.

Let the four numbers are a(smallest), b(second smallest), c(second largest) and d(largest).

Then, according to the question:

$$a + b + c + d = 4 \times 41 = 164$$

$$a + d = 75$$

$$b = c - 5$$

Then, 75 + c - 5 + c = 164

$$c = 47$$

And, b = 47 - 5 = 42

Therefore, quantity II = 42

Hence, **Quantity I < Quantity II**

3. d

Solution

Let price of 1 gram of rice = '1'

Let he sell 'x' kg of rice on the purchase of 4.5 kg.

Price of 'x' kg of rice = 1000x

Selling price of 'x' kg of rice = 4500

Selling price of 'x' kg of rice when sold at 20% discount = 80% of 4500 = 3600

Profit amount = 3600 - 1000x

Profit percent = $[(3600 - 1000x)/1000x] * 100$

$$14 (2/7) = [(360 - 100x)/x]$$

$$100/7 = [(360 - 100x)/x]$$

$$100x = 2520 - 700x$$

$$800x = 2520$$

$$x = 3.15$$

Less quantity of rice sold at the purchase of 4.5 kg of rice = 4.5 - 3.15

$$= 1.35 \text{ kg}$$

{4 - 7}

Solution

Total number of students who enrolled in 2018 and 2019 together = 400 * 2 = 800

The number of students who enrolled in 2019 = 800 * 40/100 = 320

The number of students who enrolled in 2018 = 800 - 320 = 480

The number of students who enrolled in 2020 = 320 * 100/80 = 400

Similarly, calculating the remaining data:

	2018	2019	2020
Course A	480	320	400
Course B	360	540	720
Course C	330	420	280
Course D	340	660	880
Course E	120	360	400

4. a

The number of students who enrolled in course B and C in 2018 = 360 + 330 = 690

The number of students who enrolled in course D and E in 2019 = 660 + 360 = 1020

So, required ratio = 690: 1020 = 23: 34

5. c

The number of students who enrolled in course N and M in 2020 = 125/100 * 400 + 720 * 120/100 = 1364

6. d

The number of students who enrolled in course C and D in 2019 = 420 + 660 = 1080

The number of students who enrolled in course A and E in 2018 = 480 + 120 = 600

So, required difference = 1080 - 600 = 480

7. a

The number of students who enrolled in course C and D in 2021 = 40/100 * 280 + 75/100 * 880 = 772

8. b

Solution

Let radius of the circle = 'r' cm

So,

$$(22/7) * r * r = 616$$

$$r = 14 \text{ cm}$$

Length of the rectangle = 14 + 35 = 49 cm

Breadth of the rectangle = (112/2) - 49 = 7 cm

Quantity I:

Length of the rectangle = 49 cm

Radius of the circle = 14 cm

Required percentage = $[(49 - 14)/14] * 100$

P% = 250%

P = 250

Quantity II:

Area of the rectangle = 49 * 7 = 343 cm²

Area of the circle = 616 cm^2

Required difference = $616 - 343 = 273 \text{ cm}^2$

Hence, Quantity I < Quantity II

9. d

Solution

Let present age of A and C are a years and c years, respectively.

$(a + 5) = 5(c + 5)/2 - 10.5$

$\Rightarrow 2a + 10 = 5c + 25 - 21$

$\Rightarrow 2a - 5c = -6 \text{ ---(1)}$

And $(a - 3)/(c - 3) = 3: 1$

$\Rightarrow a - 3 = 3c - 9$

$\Rightarrow a - 3c = -6 \text{ ---(2)}$

Solving (1) and (2), we get

a = 12 and c = 6

Hence, B = $3 * 6 = 18$ years

10. d

Solution

From I:

Time taken by A = $(50 - 10)/30 + 12/60 = 4/3 + 1/5 = 23/15$ hours

Time taken by B = $(50 + 10)/40 = 3/2$ hours

Time taken by A \neq Time taken by B

From II:

Time taken by A = $(50 - 10)/40 + 12/60 = 1 + 1/5 = 6/5$ hours

Time taken by B = $(50 + 10)/50 = 6/5$ hours

Time taken by A = Time taken by B

From III:

Time taken by A = $(50 - 10)/50 + 12/60 = 4/5 + 1/5 = 1$ hours

Time taken by B = $(50 + 10)/60 = 1$ hours

Time taken by A = Time taken by B

Hence, option 'd' is correct.

11. d

Solution

% of work done by Amit, Ajay and Nitesh together in 30 days = 50%

% of work done by Amit and Nitesh together in the next 30 days = 72% of $(100 - 50)\% = 36\%$

Therefore, percentage of work done by Ajay in 30 days = 14%

% of work done by Nitesh in 20 days = $100 - 50 - 36 = 14\%$

% of work that can be done by Nitesh in 30 days = $14/20 * 30 = 21\%$

Therefore, percentage of work that can be done by Amit in 30 days = $36\% - 21\% = 15\%$

Required ratio of efficiencies = 15: 14: 21

12. a

Solution

Total commission in first month = Rs. 3200

Total commission in second month = Rs. 6400

Total commission in third month = Rs. 9600

Total commission in fourth month = Rs. 4800

C's share in the commission = $4/16$ of 3200 + $5/16$ of 6400 + $3/16$ of 9600 + $5/16$ of 4800 = 800

+ 2000 + 1800 + 1500 = Rs. 6100

C's average monthly earnings = $6100/4 = \text{Rs. } 1525$. Hence, option a.

13. b

Solution

Let Rs. P be the principal.

So, Amount = $P(1 + r/100)^{\text{time}}$

$\Rightarrow 25920 = P * (12/10)^3$

$\Rightarrow P = 25920 * 1000/1728$

$\Rightarrow P = 15000$

Thus, SI = $(15000 * 4 * 20)/100 = \text{Rs. } 12000$

14. b

Solution

Let the number of candies R got = b

The number of candies Q got = 30

The number of candies (P+Q) got = $5b/3$

The number of candies P got = $5b/3 - 30$

The number of candies S got = $(5b/3 - 30)/3$

Total = number of candies = 135

$5b/3 + b + (5b/3 - 30)/3 = 135$

$8b/3 + 5b/9 - 10 = 135$

$29b/9 = 145$

b = 45

So, the number of candies P and R got = $(5*45/3 - 30) + 45 = 90$

15. e

Solution

In bag A:

Red = 3

Let, Blue = m

And White = n

Total number of balls in bag A = $(3 + m + n)$

In bag B:

Red = 6

Green = 5

Let, Yellow = k

Total number of balls in bag B = $(6 + 5 + k) = (11 + k)$

From I:

$m/(3 + m + n) = 1/3$

$\Rightarrow 3m = 3 + m + n$

$\Rightarrow 2m - n = 3$

From II:

$6/(11 + k) = 1/3$

$\Rightarrow 18 = 11 + k$

$\Rightarrow k = 7$

From I and II:

We need two equations to find the values of m and n.

So, required value cannot be found out even after combining both the statements.

16. a

Solution

From I:

SI = $(P * R * T)/100$

$\Rightarrow 3600 = (6000 * R * 4)/100$

$\Rightarrow R = 3600/240$

$\Rightarrow R = 15\%$

So, statement I alone is sufficient.

From II:

CI - SI = 892.27

Sum = Rs 6000

But the rate of interest and time are unknown and we have got just one equation.

So, from these data we cannot find the answer

17. c

Solution

Let the speed of the boat in still water and speed of the stream be 'b' km/hr and 'r' km/hr respectively

From statement I:

Downstream speed : Upstream speed = 13 : 3

$$(b + r)/(b - r) = 13/3$$

$$\Rightarrow 13b - 13r = 3b + 3r$$

$$\Rightarrow 10b = 16r$$

$$\Rightarrow b/r = 8/5$$

Let $b = 8k$ and $r = 5k$

Since there are 2 variables and 1 equation, the values of 'b' and 'r' cannot be found out.

From statement II:

$$(195/(b + r)) + (195/(b - r)) = 16$$

Since there are 2 variables and 1 equation, the values of 'b' and 'r' cannot be found out.

Using both statements together:

From statement I, $b = 8k$ and $r = 5k$

$$\text{From statement II, } (195/(b + r)) + (195/(b - r)) = 16$$

$$(195/(8k + 5k)) + (195/(8k - 5k)) = 16$$

$$\Rightarrow 15/k + 65/k = 16$$

$$\Rightarrow 80/k = 16$$

$$\Rightarrow k = 5$$

So, $r = 5 \times 5 = 25$ km/hr

{18 - 22}

Solution

The total number of candidates who attended SSC CGL exam in two shifts from three centers of Bengaluru are 4500

The total number of candidates attended SSC CGL exam in two shifts from center N = $(1/3) \times$

$$4500 = 1500$$

Number of candidates who attended SSC CGL exam in shift 2 from center N is 650

So, Number of candidates who attended SSC CGL exam in shift 1 from center N = $1500 - 650 = 850$

The total number of candidates attended SSC CGL exam in shift 1 from center K = $(10/100) \times$

$$4500 = 450$$

So, Number of candidates who attended SSC CGL exam in shift 2 from center K = $450 \times 25/9 = 1250$

The total number of candidates attended SSC CGL exam in two shifts from center K = $1250 + 450 = 1700$

The total number of candidates attended SSC CGL exam in two shifts from center M = $4500 - 1500 - 1700 = 1300$

The total candidates attended SSC CGL exam in shift 1 from center M = $1300 \times 11/26 = 550$

and, Number of candidates who attended SSC CGL exam in shift 2 from center M = $1300 \times 15/26 = 750$

18. c

Required ratio = $750 : 450 = 5 : 3$

19. d

Required average = $(650 + 1250)/2 = 950$

20. c

Required percentage = $(850/1250) \times 100 = 68\%$

21. e

Required difference = $550 - 450 = 100$

22. d

Number of male candidates attended exam in shift 1 from N = $(11/17) \times 850 = 550$

23. a

Solution

Ratio of investments by Amrish and Bikash

$$= 2400 : 4000 = 3 : 5$$

Money to be distributed between Amrish and Bikash according to ratio of their investments =

$$72260 - 8260 = \text{Rs } 64,000$$

$$\text{Money earned by Amrish} = 8260 + (3/8) \times 64000 = \text{Rs } 32,260$$

24. e

Solution

$$4.787 \times ? = (10126.22 - 8100.98)^{1/2} - 124^{1/3}$$

By taking approximate value, we get

$$5 \times ? = (10126 - 8101)^{1/2} - 125^{1/3}$$

$$5 \times ? = 2025^{1/2} - 5$$

$$5 \times ? = 45 - 5$$

$$5 \times ? = 40$$

$$? = 8$$

25. b

Solution

$$148.12\% \text{ of } (1049.94 + \sqrt[3]{2743.86}) - 125.07\% \text{ of } ? = 20.89$$

$$148\% \text{ of } (1050 + \sqrt[3]{2744}) - 125\% \text{ of } ? = 21$$

$$148\% \text{ of } (1050 \div 14) - 125\% \text{ of } ? = 21$$

$$148\% \text{ of } 75 - 125\% \text{ of } ? = 21$$

$$111 - 125\% \text{ of } ? = 21$$

$$125\% \text{ of } ? = 90$$

$$? = 72$$

26. e

Solution

$$? \approx (10 \times 560/100) + \sqrt{324} - 49$$

$$= 56 + 18 - 49$$

$$= 25$$

27. d

Solution

$$? = 5782 \div 98 \times 42 - 9$$

$$= 59 \times 42 - 9$$

$$= 2478 - 9 = 2469$$

28. b

Solution

$$? \approx (30 \times 2090/100) + \sqrt{81} - 452$$

$$= 627 + 9 - 452$$

$$= 184$$

29. a

Solution

The pattern of the following series is:

$$2.6 + 2^2 = 2.6 + 4 = 6.6$$

$$6.6 - 3^2 = 6.6 - 9 = -2.4$$

$$-2.4 + 4^2 = -2.4 + 16 = 13.6$$

$$13.6 - 5^2 = 13.6 - 25 = -11.4$$

$$-11.4 + 6^2 = -11.4 + 36 = 24.6$$

The missing term is 24.6.

30. a

Solution

The series follows the pattern:

$$231 + 15 = 246, 246 - 23 = 223, 223 + 30 = 253, 253 - 36 = 217, 217 + 41 = 258$$

Hence, option a.

31. a

Solution

The pattern is

$$23 + 67 \times 1 = 90,$$

90+67x2=224,
 224+67x3=425,
 425+67x4=693,
 693+67x5=1028

32. b
Solution
 The pattern adds the number to product of a prime number and the number following it:

44 + 3 x 4 = 56
 56 + 5 x 6 = 86
 86 + 7 x 8 = 142
 142 + 11 x 12 = 274
 274 + 13 x 14 = 456

{33 – 38}
Solution
For factory C:
 Total number of packets of almond produced in 2020 = 1200
 Total number of packets of almond produced in 2021 = 2*1000 - 1200 = 800
 Ratio between number of packets of Roasted almond and number of packets of Chocolate coated almond = 7:9
 Total number of packets of Roasted almond produced in 2021 = 800 * 7/16 = 350
 Total number of packets of Chocolate coated almond produced in 2021 = 800 * 9/16 = 450
 Total number of packets of Roasted almond produced by company A, B and C in 2021 = 2650
 (N-200) + (N + 500) + 350 = 2650
 2N + 650 = 2650
 N = 1000
 Total number of packets of Roasted almond produced by company A, B and C in 2020 = 2N - 500
 M + M - 100 + 400 = 2*1000 - 500
 2M + 300 = 1500
 M = 600

Similarly, we get:

Factory	Total number of packets of almond produced in 2020			Total number of packets of almond produced in 2021			Total number of packets
	Roasted	Chocolate coated	Total	Roasted	Chocolate coated	Total	
A	600	1200	1800	800	400	1200	3000
B	500	300	800	1500	900	2400	3200
C	400	800	1200	350	450	800	2000

33. b
 Total number of packets of Roasted almond produced by company B and C together in 2020 = 500 + 400 = 900
 Total number of packets of Chocolate coated almond produced by company B together in 2021 = 900
 Required ratio = 900: 900 = 1:1

34. c
 Total number of packets of Chocolate coated almond produced by company A in 2020 = 1200
 Total number of packets of Chocolate coated almond produced by company A in 2021 = 400
 Required sum = 1200 + 400 = 1600

35. b
 Total number of packets of almond produced by company B in 2021 = 2400
 Total number of packets of Chocolate coated almond produced by company D in 2020 = 2400 * 40% = 960

Total number of packets of Chocolate coated almond produced by company A in 2020 = 1200
 Required average = (960 + 1200)/2 = 1080

36. d
 Total number of packets of Roasted almond produced by C in 2021 = 350
 Total number of packets of Chocolate coated almond produced by company A in 2020 = 1200
 Required difference = 1200 - 350 = 850

37. a
 Total number of packets of almond produced by company B in 2020 and 2021 together = 3200
 Total number of packets of almond produced by company B in 2019 = 80% of 3200 = 2560

38. e
 Total number of packets of almond produced by company A in 2020 and 2021 together = 3000
 Total number of packets of almond produced by company B in 2021 = 2400
 Required percentage = [(3000-2400)/2400] * 100 = 25%

39. c
Solution
 Per kg selling price of final mixture = Rs.55.2
 Per kg cost price of final mixture = 55.2 * (100/115) = Rs.48

Let per kg cost price of type B rice = X
 By the rule of alligation:

45	X
48	
4	1

[X - 48]: [48 - 45] = 4: 1
 X - 48 = 12
 X = 60
 Hence, cost price of type B rice = Rs.60

40. c
Solution
 Length of rectangular floor = 20 m
 Breadth of rectangular floor = 15 m
 Area of rectangular floor = 20 x 15 = 300 sq.m
 Area covered by grey marbles = (20 - 10)(15 - 10) = 10 x 5 = 50 sq.m
 Area covered by white marbles = 300 - 50 = 250 sq.m
 Total expenditure = 300 x 10 + 50 x 80 + 250 x 100 = Rs.32000