

IBPS PO Mains 2018 Previous Year Questions (Quant)



1. Two bags A and B contain different colours of balls. In bag A, there are 2 red balls, 3 green balls and 5 white balls while bag B contain 4 red balls, 'x' green balls and 3 white balls. If the probability of drawing one white ball from bag A is $\frac{1}{6}$ more than the probability of drawing one red ball from bag B, then find the value of 'x'.

- A. 4
- B. 6
- C. 5
- D. 7
- E. None of these

2. Vikram travel a certain distance from point X to Y with a speed S kmph. If he travels the same distance with a speed (S+12) kmph, he reaches his destination 1 hour before. But if he travels with a speed of (S - 4) kmph, he reaches 30 min late. Which of the following values we can find from the given conditions.

- A) Speed of Ram, with which can travel the same distance in 3 hours
- B) Speed of Vikram, when he reaches 30 minutes late
- C) Distance between X and Z, if Z lies in between X and Y
- D) Value of S
- A. A, B and D only
- B. D only
- C. B, C and D only
- D. A, B and C
- E. Only A

3. If a group of 3 men can complete a work in 6 hours less than the time taken by a group of 2 women. Which of the following given ratio of their efficiency can give us the value of time in positive number.

- A) 6 : 5
- B) 2 : 3
- C) 5 : 2
- D) 8 : 5
- A. A only
- B. A and B only
- C. A, B and C only
- D. A C and D only
- E. B and D only

4. Ram marks the price of a chair 60% above his cost price and gives a discount of X%, in this process he gain ____%. If he gives discount of 2X%, then the profit percentage will be ____%. Which of the following values can we fill in the same order?

- A) 30, 20
- B) 20, 40
- C) 60, 30
- D) 40, 20
- A. A and D only
- B. A, B and C only
- C. B only
- D. D only
- E. A, B, C and D

Direction: Each question contains a statement followed by Quantity I, II and III. Read the information clearly and answer your questions accordingly. The options represent the relations between these three quantities

- A) >
- B) <
- C) =
- D) \leq
- E) \geq

For example:

Quantity I = 200
Quantity II = 300
Quantity III = 100
Hence, B, A

- a) A, B
- b) B, C
- c) B, A
- d) E, B
- e) B, D

5. Quantity I: A dealer marked the price of a mobile up by 15%. A buyer used a coupon code which offered a discount of Rs 500 on the marked price. Additionally, he got a cashback of 10% on using credit card. The purchase price of the mobile if the cost price was Rs 12000.

Quantity II: Hashim, Faf and Jean invested in a business in the ratio 7:8:9. The share of Hashim in the total profit of Rs 41040

Quantity III: The amount received after three years if a sum of Rs 9000 is invested at compound interest of 10% per annum.

- A. A, C
- B. C, C
- C. A, A
- D. C, B
- E. B, C

6. Quantity I: Value of x if $x^2 - 12x + 35 = 0$

Quantity II: Value of y if $y^2 - 19y + 84 = 0$

Quantity III: Value of z if $z^2 - 26z + 168 = 0$

- A. D, D
- B. C, D
- C. B, D
- D. D, B
- E. E, E

7. Quantity I: Prakhar had an average of 43 in 8 matches. After 9th match his average was 45. His score in 9th match.

Quantity II: The ages of two brothers is in the ratio 3:4. 6 years ago, the ratio of their ages was 7:10. The sum of their present ages in years.

Quantity III: The perimeter of a rectangle is 206 cm and its area is 2520 sq cm. The length of the rectangle in cm.

- A. B, C
- B. B, E
- C. B, D
- D. C, C
- E. C, E

8. The series given below is starting from 5 will follow the same pattern of series 1, 3, 9, 31, 129.

5, , , , ?

You have to find the 5th term of series which is starting with 5.

- A. 132
- B. 225
- C. 243
- D. 1080
- E. 532

9. 4, 2, 2, 3, 6, 15,, 2835

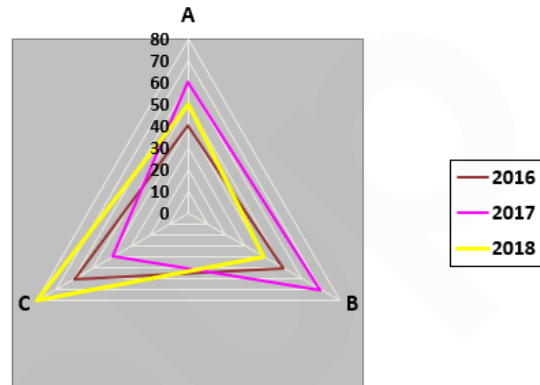
If 2835 is nth term of series, then find the value of n.

- A. 11
- B. 10
- C. 9
- D. 8

E. 13

Direction (10 - 12) : Study the following graph carefully and answer the given questions.

The graph shows the percentage of Executives among working employees in three different departments of a company in three different years.



10. In department B, total employees in the year 2016, 2017 and 2018 ratio is 2 : 3 : 5 and the average number of total executives in 2016, 2017 and 2018 is 1700. Find the number of employees in department B in the year 2017.

- A. 4500
- B. 5000
- C. 3000
- D. 1500
- E. 3600

11. In deptt. C, the number of executives in the year 2016 is 600 less than in 2017 and the number of executives in the year 2018 is 200 more than in 2016. Find the total employees of deptt. C in the year 2017 if the total executives in the year 2016, 2017 and 2018 in deptt. C is 9800?

- A. 8000
- B. 6000
- C. 5000
- D. 9000
- E. 6400

12. If the number of executives working in the year 2016 in department C is equal to the number of executives working in department A in year 2018, and the number executives in department B in year 2018 is 100% more than that in

department A in the same year, then how much percent more or less is the number of employees working in department B in year 2018 to those working in department C in year 2016?

- A. 125%
- B. 275%
- C. 100%
- D. 200%
- E. 175%

Direction (13 – 16) : Read the following passage carefully and answer the given questions

There is an apartment with 60 flats, the water supply (24 hours) to the apartment is provided from the nearby reservoir which has a capacity of 60000 litres. The reservoir gets only filled when it becomes fully empty.

In November: 50% of flats were occupied and each flat uses 25 litres/hr. If the tank was empty at the starting of the month, then the reservoir should be filled **(A)** times by the end of November.

In December: 75% of the flats were occupied and the reservoir tank is filled after every 100 hrs. Then consumption of per flat per hour in November is **(B)** consumption of per flat per hour per hour in December.

In January: Each flat consumed same amount of litres per hour as in December and takes 125 hrs to empty a completely filled reservoir, then in January, **(C)** flats were occupied.

Note: The vacant flats never use any quantity of water. ###DONE###

13. Find the value in the place of **(A)**

- A. 7
- B. 8
- C. 9
- D. 5
- E. 6

14. Find the value in place of **(B)**

- A. $14\frac{2}{3}\%$
- B. $87\frac{1}{2}\%$
- C. $57\frac{1}{7}\%$

- D. $62\frac{1}{2}\%$
- E. $28\frac{2}{7}\%$

15. Find the value in place of **(C)**

- A. 36
- B. 26
- C. 24
- D. 30
- E. 28

16. If in February (28 days), the tank capacity was increased by 20% but the tank was filled upto 80% of its new capacity, then what percent of total flats was occupied, if the reservoir tank was re-filled 7 times in the month & per hour water consumption of water per flat was 24 ltrs.

- A. $41\frac{2}{3}\%$
- B. $77\frac{1}{2}\%$
- C. $28\frac{2}{7}\%$
- D. $62\frac{1}{2}\%$
- E. $57\frac{1}{7}\%$

Direction (17 – 18) : Each question contains a statement followed by Quantity I, II and III. Read the information clearly and answer your questions accordingly.

The options represent the relations between these three quantities

- (A) >
- (B) <
- (C) =
- (D) ≤
- (E) ≥

For example:

Quantity I = 200

Quantity II = 300

Quantity III = 100

Hence, Quantity I < Quantity II > Quantity III

- (A) A, B
- (B) B, C
- (C) B, A
- (D) E, B

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(E) B, D

Answer is option: (c) ###DONE###

17. **Quantity I:** Value of A, If the interest received by Rama invested Rs. A in simple interest for 2 years at the rate of R% per annum is 20 less than the interest received by him the same sum invested him in simple interest for 2 years at the rate of (R+5)% per annum.

Quantity II: Value of B, If Shyam invested Rs. B in compound interest for two years at the rate of 10% per annum is 68 less than the compound interest received by him invested the sum of Rs.250 for 2 years at the rate of 20% per annum compounded annually.

Quantity III: Value of C, If Ramu invested Rs. C in simple interest for 2 years at the rate of 10% per annum and gets Rs.2.5 less interest than the interest received in the same sum invested in compound interest for same period at the same rate of interest

- A. A), C)
- B. C), B)
- C. C), D)
- D. D), E)
- E. None of these

18. **Quantity I:** Dalai Lama alone can do the same of work in 25 days and Jinping can do the same work in 20 days. Dalai Lama and Jinping together complete the whole work in x days. Value of x.

Quantity II: The number of days taken by Phunsukh and Wangdu together completes the whole work. Phunsukh can do the same work in 30 days and Wangdu can do the same work in 30 days.

Quantity III: Amit and Chetan together can do a piece of work in 24 days. Bhuvan and Chetan together can do the same work in 20 days. Chetan can complete the same work in 60 days. After Amit has worked for 10 days, and then Bhuvan for 10 days, time taken by Chetan to complete the remaining job is x days. Value of x.

- A. B), C)
- B. C), D)
- C. A), B)
- D. B), B)
- E. E), A)

19. There is a path of uniform width, 2 meters around it inside a rectangular park. If the length of the park decreases by 4 meters, it converts into a square.

$$\times \frac{4}{3}$$

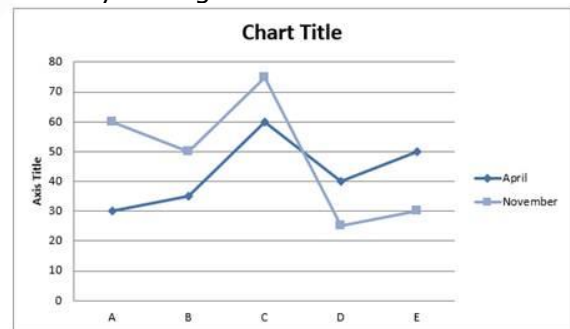
If Area of path = Area of rectangular park (Path included). Which of the following can be deduced from the given information:

- A) Area of the path.
- B) Area of internal rectangular path.
- C) Area of the circle inscribed in the square.
- D) Area of the square formed by decreasing the length of the rectangular path.
- A. Only A
- B. Only B
- C. Only A, B, C
- D. Only B & C
- E. All of the above

Direction (20 - 22) : Study the following graph carefully and answer the given questions.

The line graph shows the percentage of expenditure of five different persons in two different months.

Monthly income = Monthly Expenditure + Monthly savings



20. What is the monthly income of A in the month of November?

Statement I: The difference between monthly savings of A in November and April is 20% of A's monthly income in April

Statement II: Monthly savings of B in November is 40% of monthly savings of A in April

A. Statement I is sufficient to answer the question.

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- B. Statement II is sufficient to answer the question.
- C. Either Statement I or statement II is sufficient to answer the question.
- D. Neither Statement I nor statement II is sufficient to answer the question.
- E. Both Statements I and II are necessary to answer the question.

21. Find the difference between the monthly income of C in April and November

Statement I: The monthly savings of C in April is Rs. 12000 more than that in November.

Statement II: The monthly expenditure of C in April is Rs. 10000 more than that in November.

- A. Statement I is sufficient to answer the question.
- B. Statement II is sufficient to answer the question.
- C. Either Statement I or statement II is sufficient to answer the question.
- D. Neither Statement I nor statement II is sufficient to answer the question.
- E. Both Statements I and II are necessary to answer the question.

22. If D spends 30% of monthly income in November in mutual funds, then find the amount spend by D in November in mutual funds

Statement I: D's income in November is 30% more than the C's income in April.

Statement II: C's monthly savings in April is Rs.4800 which is 40% of his monthly income.

- A. Statement I is sufficient to answer the question.
- B. Statement II is sufficient to answer the question.
- C. Either Statement I or statement II is sufficient to answer the question.
- D. Neither Statement I nor statement II is sufficient to answer the question.
- E. Both Statements I and II are necessary to answer the question.

23. Two numbers A and B are given
What is $A + B$?

(i) LCM of A and B is 44 times their HCF
(ii) The sum of LCM of A & B and their HCF is 540.

(iii) $A/10+B/10$ is an integer.

(iv) $A + B > 150$

Which of the given statements are redundant to find the answer of the question.

- A. statement (ii)
- B. statement (iii)
- C. statement (iv)
- D. statement (i)
- E. All are redundant.

Direction (24 – 26) : Given below is the information about wind mills in four different villages Attalur, Bodanam and Chehra and Dumri. Number of wind mills in villages Attalur, Bodanam, Chehra and Dumri are 24, 20, 15 and 12 respectively. Electricity units produced in one week by one wind mill when they operate with maximum efficiency in village Attalur, Bodanam, Chehra and Dumri is 2 lakh units/week, 80000 units/ week, 1 Lakh units/week and 1.5 Lakh units/week respectively. Number of houses in each village Attalur, Bodanam, Chehra and Dumri are 540, 240, 150 and 350 respectively. Total units produced are consumed equally by each house in the village.

→Different number of winds mills operates in four different weeks of a given month.

In first week number of wind mills operative in village Attalur, Bodanam, Chehra and Dumri are 75%, 50%, 40% and 75% respectively out of the total number of wind mills. In second week it is 50%, 75%, 60% and 50% respectively. In third week it is 75%, 100%, 80% and 50% respectively and in the fourth week it is 100%, 50%, 60% and 75% respectively.

→Further, given below is the three ranges of efficiency of a wind mills (electricity produced in number of unit/week by one mill)

Efficiency Type	Range
Efficiency 1	60% - 70%
Efficiency 2	45% - 55%
Efficiency 3	30% - 40%

Three wind mills also operate on different levels

→level 1 : Consider upper limit of range of efficiency

→level 2 : Consider mid of range of efficiency

→level 3 : Consider the lower range of efficiency

Eg. If a wind mill is operative at efficiency

2 then its level 2 efficiency will be = $\frac{45+55}{2}$
=50%

Its level 1 efficiency will be 55%

And, Its level 3 efficiency will be 45%

24. What is the ratio of total electricity production in village Attalur in First week at level 1 of efficiency 2 to the total electricity production in village Bodanam in second week at Level 2 of efficiency 1?

- A. 20 : 13
- B. 33 : 13
- C. 33 : 19
- D. 27 : 19
- E. 27 : 13

25. Total units produced in village Chehra in second and fourth week at level 1 of efficiency range 1 is what percent of total units produced in village Attalur in first and fourth week at level 2 of efficiency range 1

- A. $25\frac{7}{13}\%$
- B. $23\frac{21}{273}\%$
- C. $13\frac{12}{13}\%$
- D. $22\frac{5}{13}\%$
- E. $24\frac{5}{13}\%$

26. What is the ratio of units consumed per house in village Bodanam in week 4 operating at level 3 of Efficiency range 3

to the units consumed per house in second week at level 1 of efficiency range 2 of the village Chehra?

- A. 5 : 6
- B. 13 : 19
- C. 15 : 19
- D. 13 : 33
- E. 10 : 33

27. A set of five two-digit integers' is given. Average of first and last number is middle number. Second number is half of first number. Sum of first three numbers is 127. Middle number is (A) and average of five numbers is (B). Fourth number is 62. What can be the values of (A) and (B) respectively?

- A. 64, 50
- B. 62, 55
- C. 62, 50
- D. 64, 55
- E. 60, 55

28. Ratio between marked price of a Shirt to that of a Trouser is 4 : 5. Shopkeeper allowed d% discount on the Shirt and (d + 18) % discount on the Trouser, so selling price of both Shirt and Trouser become equal. If shopkeeper made a profit of 20% on Shirt and 25% on Trouser and profit made on Trouser is Rs. 384 more than that of Shirt, then find the cost price of Shirt and Trouser respectively?

- A. 9000 Rs. 8400 Rs
- B. 9600 Rs. 9216 Rs.
- C. 9800 Rs. 9012 Rs.
- D. 9600 Rs. 8488 Rs.
- E. 9200 Rs. 9216 Rs.

29. A special type of cylindrical vessel with radius and height of 24.5 cm and 5 cm respectively is used to hold Cognac. The vessel is filled upto 80% of its capacity and then total Cognac from cylindrical vessel transferred to 9 cuboidal vessels whose length and breadth is 7 cm & 8 cm respectively. Find the approximate height of each cuboidal vessel.

- A. 18 cm
- B. 25 cm
- C. 23 cm

- D. 20 cm
- E. 15 cm

30. A shopkeeper has 15 kg of rice which costs Rs 35 per kg. If he mixes this with ___ kg of another rice costing Rs ___ per kg and sells the mixture at Rs 36 per kg and earns 20% profit. Which of the following values can we fill in the same order?

- A- 25, 27
- B- 20, 26
- C- 15, 25
- D- 10, 24
- A. A and C only
- B. B and D only
- C. C only
- D. A, B and C only
- E. A, B, C and D

31. The average of a batsman in ___ innings is 44. If his average in the first ___ innings was 42, his average in the remaining innings is 45. Which of the following values can we fill in the same order?

- A- 12, 6
- B- 10, 4
- C- 15, 5
- D- 9, 3
- A. A only
- B. B and C only
- C. C and D only
- D. D only
- E. A, B and D only

32. Two trains, Train A and Train B crosses each other completely in 18 sec while travelling in opposite directions, speed of train A is 72 km/hr and speed of train B is 54 km/hr. Moreover, length of train A is 170 m less than the length of train B. Which of the following values we can get from the above given conditions.

- a) Length of train A
- b) Time taken by train B to cross a pole
- c) Time taken by train A to cross platform of length 233 m
- d) Initial distance between both the trains.
- A. A only
- B. A, B and C only
- C. B, C and D only

- D. A, B, C and D
- E. Only C

33. A shopkeeper marks the price of a shirt ___ % above his cost price and gives a discount of ___ %. In this process he gains 68%. Which of the following values can we fill in the same order?

- A- 110, 20
- B- 120, 25
- C- 140, 30
- D- 180, 40
- A. A, B and D only
- B. A, B and C only
- C. B, C and D only
- D. A, C and D only
- E. A, B, C and D

34. Manish and Nalin entered into a partnership and invested Rs. _____ and Rs. _____ respectively. After 8 months, Manish invested Rs. 1000 more and Nalin withdraw its money after 4 months. At the end of the year the value of the profit was Rs. 8000 and the value of Nalin's share was Rs. 1000 . The values given in which of the following options will fill the blanks in the same order in which it is given to make the above statement true:

- A) 2000, 1000
- B) 9000, 4000
- C) 10040, 4600
- D) 5000, 3400
- A. Only a
- B. Only b
- C. Only b and c
- D. Only a and b
- E. Only d

35. Amit and Vinit both started a business together with an initial investment of Rs. 3x and Rs. 4x, respectively. After 4 months, Rachit joined the business with Rs. 6y. The share of annual profit received by Amit is equal to the share of annual profit received by Rachit. The values given in which of the following options can be the value of x and y respectively in order to make the above statement true:

- A) 400, 300
- B) 600, 450

- C) 540, 405
A. Only a
B. Only a and b
C. Only b and c
D. All a, b and c

E. None of a, b and c

###ANSWERS###

1. Ans. C.

In bag A,

Number of red, green and white balls is 2, 3 and 5 respectively.

Total number of balls in bag A = 10

So, probability of drawing one white ball from bag A = $\frac{5}{10}$

In bag B,

Number of green balls is x

Total number of balls in bag B = x + 7

So, probability of drawing one red ball from bag B = $\frac{4}{(x+7)}$

Given that,

$$\frac{5}{10} - \frac{4}{(x+7)} = \frac{1}{6}$$

$$\frac{4}{(x+7)} = \frac{5}{10} - \frac{1}{6}$$

$$\frac{4}{(x+7)} = \frac{1}{2} - \frac{1}{6}$$

$$\frac{4}{(x+7)} = \frac{1}{3}$$

$$x+7 = 12$$

$$x=5$$

2. Ans. A.

Let the distance between X and Y be d

Time taken to travel the distance = t

Given, speed = S

$$S = \frac{d}{t}$$

So,

If he travels the same distance with a speed (S+12) kmph, he reaches his destination 1 hours before.

$$\frac{d}{S} - \frac{d}{S+12} = 1$$

So,

But if he travels with a speed of (S - 4) kmph, he reaches 30 min late

$$\frac{d}{S-4} - \frac{d}{S} = \frac{1}{2}$$

So,

on dividing both the equation,

$$\left\{ \frac{d}{S} - \frac{d}{S+12} = 1 \right\}$$

$$\left\{ \frac{d}{S-4} - \frac{d}{S} = \frac{1}{2} \right\}$$

So,

$$\frac{1}{S} - \frac{1}{S+12} = 2 \times \left(\frac{1}{S-4} - \frac{1}{S} \right)$$

$$\frac{S+12-S}{S(S+12)} = 2 \times \frac{S-S+4}{S(S-4)}$$

So, we can calculate the value of S, d, t

A. Speed of Ram, who can travel the same distance in 3 hours: if distance can

be calculated and as the time is given then the speed can be calculated.

B. Speed of Vikram, when he reaches 30 minutes late: as we can find the value of t and d, speed can easily be calculated.

C. Distance between X and Z, if Z lies in between X and Y: cannot be calculated as the ratio or any other information is not given.

D. Value of S: it can be calculated So option (a) is the correct answer.

3. Ans. D.

Let the time taken by women to complete the work = x hours

So, the time taken by the men to complete the same work = x - 6

Total work done by both is same

$$\text{So, } 3 \times M \times (X - 6) = 2 \times W \times X$$

A. 6: 5

$$3 \times M \times (X - 6) = 2 \times W \times X$$

$$18 \times (X - 6) = 10 \times X$$

$$8X = 108; X = \frac{108}{8} = \frac{27}{2} = \text{a positive number}$$

number

B. 2: 3

$$3 \times M \times (X - 6) = 2 \times W \times X$$

$$6 \times (X - 6) = 6 \times X$$

Not a positive number

C. 5: 2

$$3 \times M \times (X - 6) = 2 \times W \times X$$

$$15 \times (X - 6) = 4 \times X$$

$$11X = 90; X = \frac{90}{11} = \text{a positive number}$$

D. 8: 5

$$3 \times M \times (X - 6) = 2 \times W \times X$$

$$24 \times (X - 6) = 10 \times X$$

$$14X = 144; X = \frac{72}{7} = \text{a positive number}$$

So option (d) is the correct answer.

4. Ans. D.

Let CP = 100

So, MP = 160

In 1st case discount = X%

In 2nd case discount = 2X%

A. 30, 20

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$30 = SP - 100; SP = 130$$

$$X = \frac{160-130}{160} \times 100 = \frac{30}{160} \times 100$$

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$20 = SP - 100; SP = 120$$

$$2X = \frac{160-120}{160} \times 100 = \frac{40}{160} \times 100$$

Thus, is incorrect

B. 20, 40

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$20 = SP - 100; SP = 120$$

$$X = \frac{160-120}{160} \times 100 = \frac{40}{160} \times 100$$

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$40 = SP - 100; SP = 140$$

$$2X = \frac{160-140}{160} \times 100 = \frac{20}{160} \times 100$$

Thus, is incorrect

C. 60, 30

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$60 = SP - 100; SP = 160$$

$$X = \frac{160-160}{160} \times 100 = \frac{0}{160} \times 100$$

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$30 = SP - 100; SP = 130$$

$$2X = \frac{160-130}{160} \times 100 = \frac{30}{160} \times 100$$

Thus, is incorrect

D. 40, 20

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$40 = SP - 100; SP = 140$$

$$X = \frac{160-140}{160} \times 100 = \frac{20}{160} \times 100$$

$$\text{Profit\%} = \frac{SP - CP}{CP} \times 100.$$

$$20 = SP - 100; SP = 120$$

$$2X = \frac{160-120}{160} \times 100 = \frac{40}{160} \times 100$$

Thus, is correct

So option (d) is the correct answer.

5. Ans. D.

Quantity I:

$$MP = 12000 \times 1.15 = \text{Rs } 13800$$

$$\text{Price after coupon discount} = 13800 - 500 = \text{Rs } 13300$$

$$\text{Purchase price} = 13300 \times 0.9 = \text{Rs } 11970$$

Quantity II:

$$\text{Share of Hashim} = 7/(7+8+9) \times 41040 = \text{Rs } 11970$$

Quantity III:

$$\text{Amount} = 9000 \times (1.1)^3 = 9000 \times 1.331 = \text{Rs } 11979$$

Therefore, C, B

6. Ans. A.

Quantity I:

$$(x-5)(x-7) = 0$$

$$\Rightarrow x = 5, 7$$

Quantity II:

$$(y-7)(y-12) = 0$$

$$\Rightarrow y = 7, 12$$

Quantity III:

$$(z-12)(z-14) = 0$$

$$\Rightarrow z = 12, 14$$

$$x \leq y \leq z$$

Hence, D, D

7. Ans. A.

Quantity I:

Suppose his score in 9th match was S.

$$(43 \times 8 + S)/9 = 45$$

$$\Rightarrow 344 + S = 405$$

$$S = 61$$

Quantity II:

Suppose their ages are 3n and 4n.

$$(3n - 6) : (4n - 6) = 7:10$$

$$\Rightarrow n = 9$$

$$\text{Sum of present ages} = 27 + 36 = 63$$

Quantity III:

Let length and breadth be L & B respectively.

$$L+B = 206/2 = 103 \text{ and } LB = 2520$$

$$\Rightarrow L, B = 63, 40$$

The length will be 63

$$61 < 63 = 63$$

Hence, B, C.

8. Ans. B.

The pattern is

$$1$$

$$1 \times 1 + 2 = 3$$

$$3 \times 2 + 3 = 9$$

$$9 \times 3 + 4 = 31$$

$$31 \times 4 + 5 = 129$$

Similarly,

$$5$$

$$5 \times 1 + 2 = 7$$

$$7 \times 2 + 3 = 17$$

$$17 \times 3 + 4 = 55$$

$$55 \times 4 + 5 = 225$$

So, the missing number is 225
So option (b) is the correct answer.

9. Ans. B.

The pattern is

$$4$$

$$4 \times \frac{1}{2} = 2$$

$$2 \times 1 = 2$$

$$2 \times \frac{3}{2} = 3$$

$$3 \times 2 = 6$$

$$6 \times \frac{5}{2} = 15$$

$$15 \times 3 = 45$$

$$45 \times \frac{7}{2} = \frac{315}{2}$$

$$\frac{315}{2} \times 4 = 630$$

$$630 \times \frac{9}{2} = 2835$$

So, the 10th term is 2835
So option (b) is the correct answer.

10. Ans. C.

Total executive in deptt. B in the year 2016, 2017 and 2018 is 2x, 3x and 5x.

According to the question,

$$[2x * 50/100 + 3x * 70/100 + 5x * 40/100]/3 = 1700$$

$$(x + 21x/10 + 2x) = 5100$$

$$(10x + 21x + 20x) = 51000$$

$$51x = 51000$$

$$x = 1000$$

Total executives in deptt. B in the year 2017 = 3*1000 = 3000

11. Ans. D.

Let us take total executives in the year 2016 be x

According to the question,

$$(x+x+600+x+200) = 9800$$

$$\Rightarrow x = 3000$$

Total executives of deptt. C in the year 2017 = x+600 = 3000 + 600 = 3600

Total employees in deptt. C in the year 2017 = 3600/40 * 100 = 9000

12. Ans. D.

Let the number of employees working in the year 2016 in department C, number of executives working in department A in year 2018 and number of executives in department B in year 2018 be C, A and B, then

ATQ,

$$60\% \text{ of } C = 50\% \text{ of } A$$

$$\Rightarrow 6C = 5A \dots (i)$$

and

$$40\% \text{ of } B = 2 \times 50\% \text{ of } A$$

$$\Rightarrow 2B = 5A \dots (ii)$$

From equation (i) and (ii), we get

$$5A = 2B = 6C$$

$$\Rightarrow B = 3C$$

So, required percent =

$$\frac{B - C}{C} \times 100 = \frac{3C - C}{C} \times 100 = 200\%$$

13. Ans. C.

ATQ,

Number of times the reservoir needs to be filled =

$$\frac{30(\text{no of flats}) \times 25(\text{consumption per hour per flat}) \times 24(\text{hours}) \times 30(\text{days})}{60000(\text{Reservoir capacity})} = 9$$

14. Ans. B.

ATQ,

$$45(\text{flats}) \times 100(\text{hrs}) \times x(\text{consumption per flat per hour}) = 60000(\text{Reservoir capacity})$$

$$\Rightarrow x = 40/3(\text{ltr/hr})$$

So,

$$\frac{25 - \frac{40}{3}}{\frac{40}{3}} \times 100 = 87\frac{1}{2}\%$$

15. Ans. A.

ATQ,

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$$\frac{40}{3} (\text{consumption per hour per flat}) \times 125 (\text{hours}) \times x (\text{flats}) = 60000$$

$$\Rightarrow x = 36$$

16. Ans. A.

Increased reservoir capacity = 1.2
 $\times 60000 = 72000$

Filled reservoir = $72000 \times 0.8 = 57600$

So, ATQ

$$7 (\text{times}) \times 57600 (\text{capacity}) = 24 (\text{hours per day}) \times 28 (\text{days}) \times 24 (\text{consumption per hour per flat}) \times x (\text{no. of flats})$$

$$\Rightarrow x = 25$$

$$\Rightarrow \% \text{ flats occupied} = \frac{25}{60} \times 100 = 41\frac{2}{3}\%$$

17. Ans. B.

$$\text{Q I: } \frac{A \times 2 \times R}{100} + 20 = \frac{A \times 2 \times (R+5)}{100}$$

$$\Rightarrow A = 200$$

Q

II:

$$B \left(1 + \frac{10}{100}\right)^2 - B + 68 = 250 \left(1 + \frac{20}{100}\right)^2 - 250$$

$$\Rightarrow B = 200$$

$$\text{Q I: } \frac{C \times 2 \times 10}{100} + 2.5 = \frac{C \left(1 + \frac{10}{100}\right)^2 - C}{100}$$

$$\Rightarrow C = 250$$

Clearly, QI=QII<QIII $\Rightarrow C, B)$

18. Ans. D.

$$\text{Q I: } \frac{20 \times 25}{45} = \frac{100}{30 \times 30} \text{ days}$$

$$\text{Q II: } 60 = 15 \text{ days}$$

Q III: Clearly, Amit can do the work in = $\frac{24 \times 60}{36}$

$$= 40 \text{ days}$$

& Bhuvan can do the work in = $\frac{20 \times 60}{40} = 60$ days

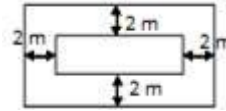
Now, Work completed by Amit = $\frac{1}{4}$

& Work completed by Bhuvan = $\frac{1}{3} \Rightarrow$ Work done by Chetan = $\frac{5}{12}$

\Rightarrow Chetan completes work in X days = $\frac{5}{12} \times 60 = 25$ days

Clearly, QI<QII<QIII

19. Ans. E.



If the external breadth of the park is 'p' meters,

Then, External length of park = (p+4) meters

So, sides of internal rectangle are p and p-4 meters.

Now ATQ,

$$p(p+4) = \frac{4}{3}(p(p+4)) - p(p-4)$$

$$\Rightarrow p = \frac{20}{3} \text{ mts}$$

$$\text{Length of park} = \frac{20}{3} + 4 = \frac{32}{3}$$

Breadth of park =

$$\frac{20}{3} \Rightarrow \text{Area of Park can be calculated.}$$

Side of square =

$$\frac{20}{3} \Rightarrow$$

Area of Path, inscribed circle & Square formed by decreasing length of rect

can be calculated.

Clearly, all given options can be calculated.

20. Ans. D.

Statement I:

The difference between monthly savings of A in November and April is 20% of A's monthly income in April

Monthly income of A in April be Rs. a & Monthly income of A in November be Rs. b

$$\text{Monthly savings of A in April} = a \times \frac{70}{100} = 7a/10$$

$$\text{Monthly savings of A in November} = b \times \frac{40}{100} = 4b/10 \quad (7a/10 - 4b/10) =$$

$$20/100 \times a$$

Statement II:

Monthly savings of B in November is 40% of monthly savings of A in April

Monthly income of A in April be Rs. a
 Monthly income of B in November be Rs. c

$$\text{Monthly savings of A in April} = a \times \frac{70}{100} = 7a/10$$

$$\text{Monthly savings of B in November} = 40/100 \times 7a/100$$

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So, From the statement I and II, we cannot find the answer of the given question.

21. Ans. E.

Monthly income of C in April be Rs. x
Monthly income of C in November be Rs. y

Monthly expenditure of C in April = $x \cdot 60/100$

Monthly savings of C in April = $x \cdot 40/100$

Monthly expenditure of C in November = $y \cdot 75/100$

Monthly expenditure of C in November = $y \cdot 25/100$

Statement I: The difference between the monthly savings of C in April and November is 12000.

$$x \cdot 40/100 - y \cdot 25/100 = 12000$$

$$40x - 25y = 1200000 \text{ --- (1)}$$

Statement II: The difference between the monthly expenditure of C in April and November is 10000.

$$x \cdot 60/100 - y \cdot 75/100 = 10000$$

$$60x - 75y = 1000000 \text{ ---- (2)}$$

From the statement I and II, we can find the monthly income of C in April and November.

22. Ans. E.

Statement I: D's income in November is 30% more than the C's income in April.

D's income in November = $130/100 \cdot C$'s income in April

Statement II: C's monthly savings in April is Rs.4800 which is 40% of his monthly income.

C's monthly savings in April = 4800

C's monthly income in April = $4800/40 \cdot 100 = 12000$

From Statement I and II, we can find the savings of D in November

23. Ans. E.

From (i) & (ii),

Let, HCF be x

Then, LCM is 44x

$$44x + x = 540$$

$$x = 540/45 = 12$$

From (iii), $A + B = 10K$

Let, $A = 12a$ & $B = 12b$

Then $A + B = 12(a + b)$, where a & b are co-prime.

Also, $a \cdot b = 44$

Possible values of a and b are (4, 11) or (1, 44)

Sum of $A + B = 12(4 + 11) = 180$

Or $A + B = 12(1 + 44) = 540$

So, given question can't be answered even after including all the statements.

24. Ans. B.

Village	No. of wind mills	Units Produced	No. Of Houses	Wind Mills operative			
				Week1	Week2	Week3	Week4
A	24	2 lakh/week	540	18	12	18	24
B	20	80000 /week	240	10	15	20	10
C	15	1 lakh/week	150	6	9	12	9
D	12	1.5 lakh/week	350	9	6	6	9

Level 1 (upper limit) of efficiency range 2 means 55%

Total units produced in village Attalur in first week when operated at level 1 of efficiency range 2

$$= 18 \times 0.55 \times 2$$

Similarly,

Level 2 (mid limit) of efficiency Range 1

$$\frac{60 + 70}{2} \% = 65\%$$

$$= 2 = 65\%$$

Total units produced in village Bodanam in week 2 when operated at level 2 of efficiency range 1

$$= 15 \times 0.65 \times 0.8$$

$$\text{Required ratio} = \frac{(18 \times 0.55 \times 2)}{(15 \times 0.65 \times 0.8)} = 33 : 13$$

25. Ans. B.

Total units produced in Village Chehra at level 1 of efficiency range 1

$$= (9 + 9) \times 1,00,000 \times 0.70 = 1260000$$

Total units produced in village Attalur at level 2 of efficiency range 1

$$= (18 + 24) \times 200000 \times 0.65$$

$$= 42 \times 2000 \times 0.65 = 54,60,000 \text{ units}$$

$$\text{Required percentage} = \frac{126/546}{21} \times 100$$

$$= 23.273\%$$

26. Ans. E.

Total units consumed at level 3 of efficiency range 3 per house =

$$\frac{(10 \times 80000 \times 30)}{(240 \times 100)} =$$

1000 units/house

Total units consumed at level 1 of

$$\frac{9 \times 1,00,000}{150} \times 0.55 =$$

3300 unit/house

Required ratio = 10:33

27. Ans. D.

Let first and fifth numbers be '2x' and '2a' respectively.

Then, third number (A) = $(2x+2a)/2 = x + a$

Second number = $2x/2 = x$

Then,

ATQ,

$$2x + x + x + a = 127$$

$$4x + a = 127$$

From option (a)

$$x + a = 64$$

$$\Rightarrow 3x = 63$$

$$\Rightarrow x = 21$$

Average of five numbers =

$$(42+21+64+62+2(64-21)) / 5 = 55$$

According to this, option (d) 64, 55 is our correct answer.

28. Ans. B.

ATQ,

$$\frac{MP_{shirt}}{MP_{trouser}} = \frac{5}{4}$$

$$SP_{shirt} = \left(1 - \frac{d}{100}\right) 4K \text{ \& } SP_{trouser} = \left(1 - \frac{d+18}{100}\right) 5K$$

$$\Rightarrow 4 - \frac{4d}{100} = 5 - \frac{5d+90}{100} \Rightarrow d = 0.1 \text{ or } 10\%$$

Now, 1.2

$$CP_{shirt} = 4K \times 0.9 \text{ \& } 1.25CP_{trouser} = 5K \times 0.72$$

$$\& \quad 0.25 \times 5K \times \frac{0.72}{1.25} = 0.2$$

$$\times 4K \times \frac{0.9}{1.2} = 384$$

$$K = 3200$$

$$\therefore CB_{shirt} = 3 \times 3500 = 10500 \text{ \& } CB_{trouser} = 3500 \times \frac{52}{55} = 3272$$

29. Ans. E.

Height of each cuboidal vessel =

$$\frac{3.14 \times 24.5 \times 24.5 \times 5 \times 0.8}{9 \times 7 \times 8} = 14.96 \approx$$

15

Note: Taking value of $\pi = 3.14$

30. Ans. A.

The resultant rice should cost $36 \div 1.2 =$ Rs 30/kg

A -

Cost of resultant rice = $(15 \times 35 + 25 \times 27) \div (15 + 25) = 1200 \div 40 =$ Rs 30/kg

B -

Cost of resultant rice = $(15 \times 35 + 20 \times 26) \div (15 + 20) = 1045 \div 35 =$ Rs 29.86/kg

C -

Cost of resultant rice = $(15 \times 35 + 15 \times 25) \div (15 + 15) = 900 \div 30 =$ Rs 30/kg

D -

Cost of resultant rice = $(15 \times 35 + 10 \times 24) \div (15 + 10) = 765 \div 25 =$ Rs 30.6/kg
Only A and C satisfy this condition.

31. Ans. C.

A -

Average in 12 innings = 44

Average in first 6 innings = 42

Average in remaining 6 innings = $(44 \times 12 - 42 \times 6) / 6 = 276 / 6 = 46$

B -

Average in 10 innings = 44

Average in first 4 innings = 42

Average in remaining 6 innings = $(44 \times 10 - 42 \times 4) / 6 = 272 / 6 = 45.33$

C -

Average in 15 innings = 44

Average in first 5 innings = 42

Average in remaining 10 innings = $(44 \times 15 - 42 \times 5) / 6 = 450 / 6 = 45$

D -

Average in 9 innings = 44

Average in first 3 innings = 42

Average in remaining 6 innings = $(44 \times 9 - 42 \times 3) / 6 = 270 / 6 = 45$

C and D satisfy the condition.

32. Ans. B.

Let, the length of train B = x

So, the length of train A = x - 170

Given, speed of train A = 72 km/hr = 20 m/s

Speed of train B = 54 km/hr = 15 m/s

Train A and Train B crosses each other completely in 18 sec while travelling in opposite directions

$$(20 + 15) = \frac{x+x-170}{18}$$

$$\text{So, } 35 = \frac{2x-170}{18}$$

$$\text{So, } 35 \times 18 = 2x - 170$$

$$630 + 170 = 2x$$

$$800 = 2x; x = 400$$

So, the length of train B = x = 400 m

Ans, the length of train A = x - 170 = 400 - 170 = 230 m

A. Length of train A = 230 m

B. Time taken by train B to cross a pole =

$$15 = \frac{400}{t}; t = \frac{400}{15} = \frac{80}{3} \text{ sec}$$

C. Time taken by train A to cross platform of length 233 m =

$$20 = \frac{230+233}{t}; t = \frac{463}{20} \text{ sec}$$

D. Initial distance between both the trains = cannot be determined

So option (b) is the correct answer.

33. Ans. D.

Let CP = 100

A - SP = 210 x 0.8 = 168, profit = 68%

B - SP = 220 x 0.75 = 165, profit = 65%

C - SP = 240 x 0.7 = 168, profit = 68%

D - SP = 280 x 0.6 = 168, profit = 68%

A, C and D fit into the blanks.

34. Ans. D.

Initially, let Manish and Nalin invested Rs.

'm' and Rs. 'n' respectively

Profit will be distributed in the ratio

$$(m \times 8 + (m + 1000) \times 4) : n \times 4$$

$$= (3m + 1000) : n$$

Sum of parts of the ratio = 3m + n + 1000

$$\text{Given, } \frac{n}{3m+n+1000} \times 8000 = 1000$$

$$\frac{n}{3m + 3n + 1000} = \frac{1}{8}$$

$$3m + 3n + 1000 = 8n$$

$$3m + 1000 = 7n$$

$$7n - 3m = 1000$$

Only options a and b can be the answer.

So option (d) is the correct answer.

35. Ans. D.

Ratio of profit share of Amit: Vinit: Rachit

$$= (3x \times 12) : (4x \times 12) : (6y \times 8) = 36x$$

$$: 48x : 48y = 3x : 4x : 4y$$

According to the question,

$$3x = 4y$$

$$\frac{x}{y} = \frac{4}{3}$$

So, $\frac{x}{y} = \frac{4}{3}$

For option a:

$$\frac{x}{y} = \frac{400}{300} = \frac{4}{3}$$

So, option a can be the answer

For option b:

$$\frac{x}{y} = \frac{600}{450} = \frac{4}{3}$$

So, option b can be the answer

For option c:

$$\frac{x}{y} = \frac{540}{405} = \frac{4}{3}$$

So, option c can be the answer

So option (d) is the correct answer.

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