Special Aptitude Sectional Test -1

Quantitative Aptitude

Directions (Q. 1-5): What approximate value should come in place of question mark (?) in the following questions?

1. 11.25% of 135 + 8.72% of 463 = ?

A. 45
B. 55
C. 35
D. 65
E. 44

2. 1527 × 0.3 + 38% of 380 + 49 × 0.490 = ?

A. 625
B. 627
C. 527
D. 427
E. 637

3. 3 2/7 + 6 1/7 - 2 1/7 + 13 2/3 = ?

A. 19
B. 18
C. 21
D. 23
E. 24

4. 1.65% of 8471 – 0.61% of 9326 = ?

A. 76
B. 78
C. 75
D. 80
E. 95

5. 1527 × 0.3 + 38% of 380 + 49 × 0.490 = ?

A. 625
B. 627
C. 527
D. 427
E. 637

Directions (Q. 6-10): what should come in place of question mark in the following number series?

6. 3, 14, 50, ?, 1534, 10747

A. 260
B. 458
C. 257
D. 267
E. 268

7. 543, 668, 704, 1047, ?, 1840

A. 1110
B. 1111

C. 1115
D. 1121
E. 1112

8. 71, 78, 149, 227, 376, 603, ?
A. 779
B. 879
C. 980
D. 979
E. 880

9. 88, 44, ?, 165, 577.5, 2598.75
A. 60
B. 62
C. 64
D. 68
E. 66

10. 3, 9, 31, 129, ?, 3913
A. 651
B. 650
C. 550
D. 551
E. 457

Directions (Q.11-15): In each questions, two equations numbered I and II have been given. You have to solve both the equations and mark the appropriate option.

11. I. 4X^2 - 9X -34 = 0
II. Y^2 + 20Y +51 = 0
A. X ≥ Y
B. X > Y
C. X < Y
D. X ≤ Y
E. X = Y or no relationship can be established

12. I. 42X^2 - 115X + 47 = 0
II. 54Y^2 + 79Y - 53 = 0
A. X = Y or no relationship can be established
B. X ≤ Y
C. X > Y
D. X < Y
E. X ≥ Y

13. I. X^2 + 361 = 442
II. Y + √289 = √676
A. X ≥ Y
B. X ≤ Y
C. X < Y
D. X > Y

E. X = Y or no relationship can be established

14. I. 6X^2 - 14X -12 = 0

II. 4Y^2 + 19Y +12 = 0

A. X > Y
B. X < Y
C. X ≤ Y
D. X ≥ Y
E. X = Y or no relationship can be established

15. I. 4X^2 - 23X +28 = 0

II. 12Y^2 - 25Y +7 = 0

A. X < Y
B. X > Y
C. X ≤ Y
D. X ≥ Y
E. X = Y or no relationship can be established

Directions(Q. 16-20) Study the following questions and answer and the appropriate.

16. Quantity 1: A 450m long train crosses a 200m platform at the speed of 207kmph. What is the time taken by train to cross the tunnel?

Quantity 2: A train length of 250 m crosses the pole at the speed of 25sec. If another train B crosses the train A, which is 320m long from opposite direction at a speed of 25 m/sec. What is the time taken to cross each other?

A. Quantity I ≤ Quantity II
B. Quantity I ≥ Quantity II
C. Quantity I > Quantity II
D. Quantity I < Quantity II
E. No relation

17. Quantity 1: 5 years ago, the ratio of suba and deepa was 8:5. 2 years hence, their age ratio will be 5: 4. What is the present age of suba?

Quantity 2: The ratio of A and B after 5 years will be 8:3. 4 years hence, the ratio of A and B is 29:39. What is the present age A?

A. Quantity I ≤ Quantity II
B. Quantity I ≥ Quantity II
C. Quantity I > Quantity II
D. Quantity I < Quantity II
E. No relation

18. Quantity 1: Average of first 10 odd numbers

Quantity 2: Average of first 10 prime numbers

A. Quantity I ≤ Quantity II
B. Quantity I ≥ Quantity II
C. Quantity I > Quantity II
D. Quantity I < Quantity II
E. No relation

19. Quantity 1: A pipe can fill a tank in 7 hours, but due to a leakage it took 9 hours to fill the tank. If the tank is full, in what time will the tank become empty due to the leakage?

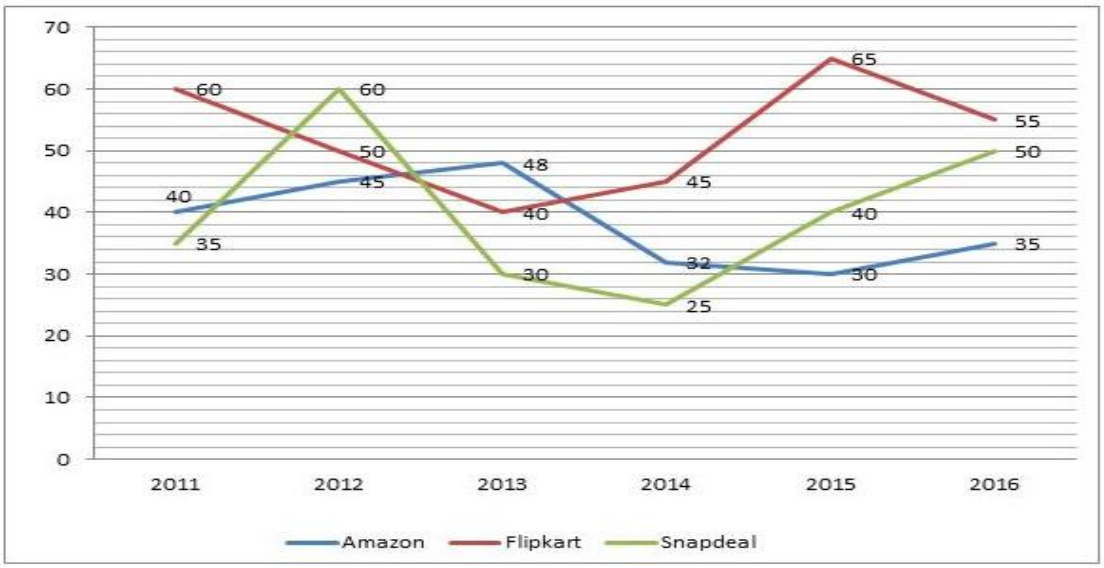
Quantity 2: There are 2 taps to fill a tank. One tap can fill tank in 6 hours and another tap can fill the tank in15 hours. Both tap are opened alternatively and how long it will take to full the tank? (Approximately)

A. Quantity I ≤ Quantity II
B. Quantity I ≥ Quantity II
C. Quantity I > Quantity II
D. Quantity I < Quantity II
E. No relation

20. Quantity 1: In pack of 52 cards, two cards are taken out. What is the probability that both are king cards?
Quantity 2: 2 dice are thrown. What is the probability of choosing sum of dice is divisible by 2?

A. Quantity I ≤ Quantity II
B. Quantity I ≥ Quantity II
C. Quantity I > Quantity II
D. Quantity I < Quantity II
E. No relation

Directions (Q. 21-25): Following line-graph shows the percentage profit earned by three e commerce companies Amazon, Flipkart and Snapdeal in the period of 2011 to 2016.



21. If the expenditure of Flipkart in the year 2011 and the income of Snapdeal in the year 2014 are equal then what is the ratio of the income of Flipkart in the year 2011 to the expenditure of Snapdeal in the year 2014?

A. 2:1
B. 1:2
C. 3:5
D. 5:7
E. 4:9

22. What is the percentage rise in the percentage profit of Flipkart from 2013 to 2014?

A. 15%
B. 17%
C. 12.5%
D. 10.5%

E. 22.5

23. If the total expenditure of Amazon in the year 2011 and Snapdeal in the year 2015 together is 94 lakh then what is the sum of the total income of Amazon in 2011 and Snapdeal in 2015?

A. 92.36 lakh
B. 151.20 lakh
C. 142.80 lakh
D. 136.40 lakh
E. 131.60 lakh

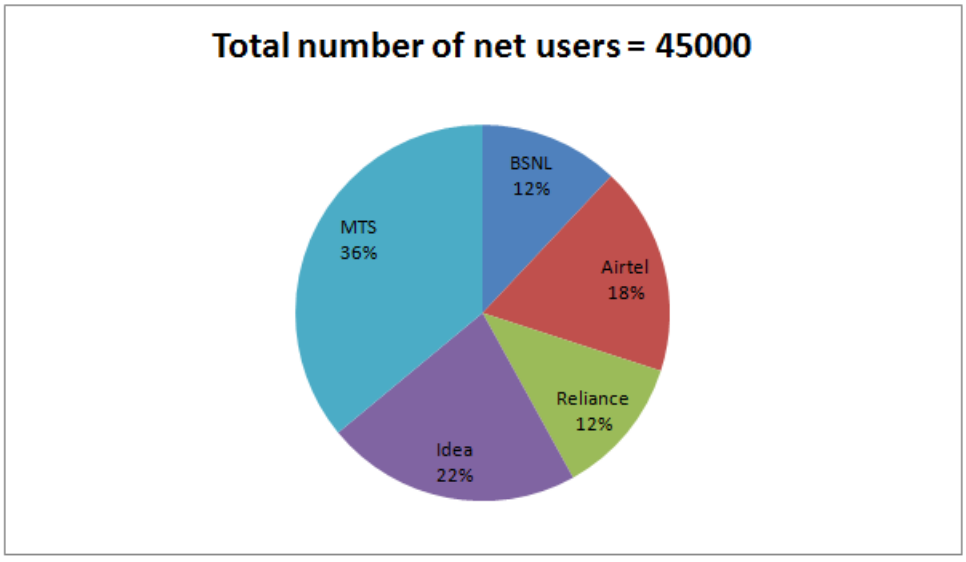
24. If the expenditure of Amazon in the year 2013 is 55.5 lakh then what is its income in that year?

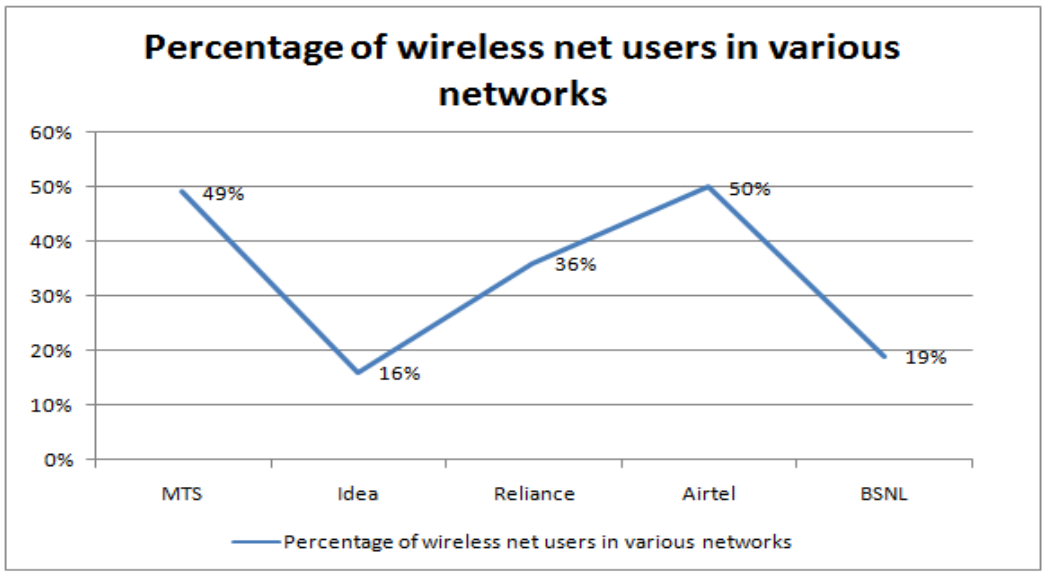
A. 85.54 lakh
B. 82.14 lakh
C. 72.64 lakh
D. 83.94 lakh
E. 88.24 lakh

25. If the income of Amazon in year 2011 and expenditure of Flipkart in year 2012 are equal and 91 lakh each then what is the difference between the income of Flipkart in 2012 and the expenditure of Amazon in the year 2011?

A. 70.9 lakh
B. 75.2 lakh
C. 69.3 lakh
D. 71.5 lakh
E. 86.4 lakh

Directions (Q. 26-30): Study the following pie chart and line graph carefully and answer the questions given below it.





26. What is the respective ratio of the number of wire net users in Idea to the total number of wire net users from all the networks together?

A. 154: 458
B. 154: 252
C. 154: 378
D. 154:527
E. 154: 625

27. The number of wireless net users in BSNL network is what percent of the total number of net users?

A. 2.28
B. 3.25
C. 1.76
D. 4.86
E. 0.85

28. What is the respective ratio of the total number of wire net users to the total number of wireless net users in Idea network?

A. 21:3
B. 21:4
C. 4:21
D. 3:21
E. 21:7

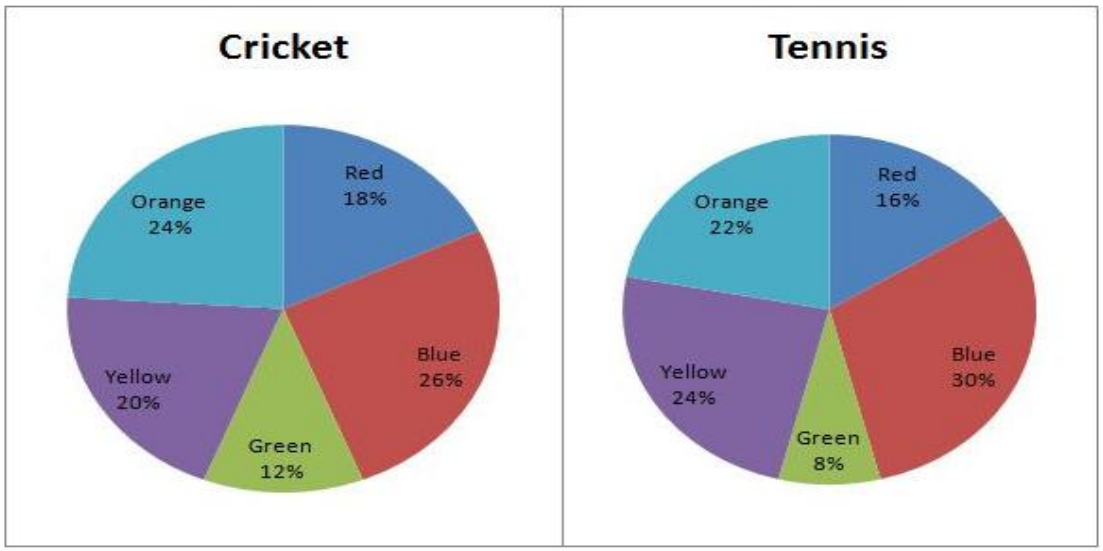
29. The total number of wireless net users in all networks is what percent of the total number of wire net users in all networks? (Rounded off to two digits after decimal)

A. 54.11
B. 53.70
C. 58.13
D. 61.32
E. 62.03

30. What is the difference between the total number of wire net users from MTS network and the total number of wire net users from Reliance network?

A. 4096
B. 4752
C. 6018
D. 5874
E. 4806

Directions (Q. 31-35): Study the following pie-chart carefully to answer the given questions. Pie-chart I and pie-chart II show the percentage of various colours of Ball in Cricket and Tennis respectively.



31. If the total number of Green colour ball in Tennis is 50000 and the ratio of Green colour ball in Tennis to that in Cricket is 2 : 3 then what is the total number of Balls in Cricket?

A. 515000
B. 625000
C. 575000
D. 675000
E. 725000

32. If the total number of other colour Balls in Cricket increases by10% per annum then what will the number of other colour Balls will be after 2 years? (Given that the number of other colour Balls at present is 1.5 lakh)

A. 181500
B. 195800
C. 179200
D. 180500
E. 183900

33. If the number of Yellow colour ball in Tennis increases by 5% per annum, then what was the number of Yellow colour ball in Tennis two years ago? (Given that the number of Yellow colour ball is 2.5 lakh as of now)

A. 215847
B. 239875
C. 251437
D. 202527
E. 226757

34. If the total Ball in Cricket is 1200000 and the ratio of Blue colour ball in Cricket to that in Tennis is 3 : 5, then what is the total number of Balls in Tennis? (You are not expected to calculate the exact value.)

A. 18.5 lakh
B. 19.3 lakh
C. 17.3 lakh
D. 16.3 lakh
E. 15.4 lakh

35. If the total Ball in Tennis is 859000 and the total Ball in Cricket are 786000 then what is the ratio between the number of Orange colour ball in Tennis and that number of Blue colour ball in Cricket?

A. 47418 : 36896
B. 51996 : 54786
C. 63786 : 45072
D. 37796 : 40872
E. None of these

36. 25 men can complete the work on 18 days and 5 men left after 9 days. Some women were replaced to complete the remaining work, If work should be completed in agreed time .how many women were being replaced?

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

37. 1/4th part of a commodity is sold at 15% of profit. 1/6th part is sold at 25% of profit and the remaining part is sold at 10% profit. If overall profit obtained is Rs 660 then what is the cost price of commodity.

A. Rs 4600
B. Rs 5200
C. Rs 4800
D. Rs 4400
E. Rs 5000

38. A certain sum of money amounted to Rs 7200 at 5% in a time in which Rs 4800 amounted to Rs 6336 at rate of 8%. What is the sum in this case considering simple interest rate?

A. Rs 6500
B. Rs 6000
C. Rs 5600
D. Rs 6200
E. None of These

39. In a 100m race, Kranthi beats Shakthi by 10m and Shakthi beats Bhakthi by 5s. What is the speed of Kranthi (in m/s) if it is known that Kranthi runs twice as fast as Bhakthi?

A. 18.0
B. 18.2
C. 17.7
D. 16.2
E. 16.6

40. In z years ago Shashi was one seventh as old as Tinu. In z years from now Tinu will be thrice as old as Shashi. What is the ratio of Tinu's current age to Shashi's current age?

A. 4:1
B. 1:4
C. 17:9
D. 8:5
E. Cannot be determined

41. A man purchases 2 horses and 3 cows for Rs 72000. He sells the horses at 15% profit and cows at 5% loss. If in this way he gets a total profit of Rs 8000 then what is the total cost of one horse and one cow?

A. Rs 36667
B. Rs 33667
C. Rs 38774
D. Rs 39774
E. Rs 40664

42. A shopkeeper bought 40 kg of rice at the rate of Rs. 50 per kg. He sold 30% of the total quantity at the rate of Rs. 60 per kg. Approximately, at what price per kg. Should he sell the remaining quantity to make 20% overall profit?

A. Rs. 56
B. Rs. 75
C. Rs. 65
D. Rs. 60
E. Rs. 70

43. A rectangular reservoir has a base of 18 m * 15 m Water flows in through a pipe of cross sectional area 5 cm * 3 cm at the speed of 15 m/sec. In 12 min the water in the reservoir will rise by

A. 4 cm
B. 5 cm
C. 3 cm
D. 6 cm
E. None of these

44. A cistern has a leak which would empty it in 12 hours. A tap is turned on which admits 5 liters a minutes into the cistern and it is now emptied in 16 hours. How many liters does the cistern hold?

A. 14400 liters
B. 16500 liters
C. 15550 liters
D. 17800 liters
E. 15250 liters

45. The digit in the units place of a two-digit number is equal to the digit in the tens place of one-third of that number and the digit in the tens place of the original number is 2 less than the digit in the units place of one-third of the number. If the sum of the digits of the original number is 6, then what is the number?

A. 15
B. 24
C. 33
D. 42
E. 51

46. Sum of current ages of father and son is 70 years. Father told to his son, "20 years ago, I was of your present age." What will be the son's age 10 years from now?

A. 25 years
B. 45 years
C. 35 years
D. 50 years
E. 30 years

47. A's present age is 3/4 of B's and B's present age is 11/17 of C's present age. The sum of their present ages is 145 years. What is the difference between the ages of A and C?

A. 30 years
B. 32 years
C. 35 years
D. Can't determined
E. None of these

48. A gives 58% of his salary to B. From this amount, B spends 28% on his food items and 8% on repair of furniture and the remaining Rs 24128 puts in the saving account. What is the salary of A?

A. Rs 70000
B. Rs 55400
C. Rs 65000
D. Rs 60800
E. Rs 75600

49. If the numerator of a fraction is increased by 2 and denominator is increased by 3. the fraction becomes 7/9; and if numerator as well as denominator is decreased by 1 the fraction becomes 4/5. What is the original fraction?

A. 6/7
B. 13/15
C. 5/6
D. 8/21
E. 7/12

50. A tank can be filled by three pipes A, B and C in 8 hours. Pipes were opened for 2 hours and then pipe C was closed. A and B filled the remaining tank in 12 hours. Find the time taken by pipe C alone to completely fill the tank.

A. 12 hrs
B. 14 hrs
C. 16 hrs
D. 18 hrs

E. None of these

Answers with Explanation:

1. Answer B

? = 11.25 × 135 /100 + 8.72 × 463/100
= 15.1875 + 40.37
= 55

2. Answer B

? = 1527 × 0.3 + 38 × 380/100 + 49 × 0.490
= 458.1 + 144.4 + 24.01
= 458 + 144 + 24
= 626
= 627

3. Answer C

? = 3 2/7 + 6 1/7 – 2 1/7 + 13 2/3
= (3 + 6 + 13 – 2) + (2/7 + 1/7 - 1/7 + 2/3)
= 20 + (6 + 3 – 3 + 14)/21
= 20 + 20/21
= 21

4. Answer A

(8471 × 1.65%) – (9326 × 0.61%)
= 85 × 1.6 – 93 × 0.6
= 136 – 55.8
= 80.2
= 80

5. Answer B

? = 1527 × 0.3 + 38 × 380/100 + 49 × 0.490
= 458.1 + 144.4 + 24.01
= 458 + 144 + 24
= 626
= 627

6. Answer C

The series is 3 x3 + 5 = 14, 14 x 4 – 6 = 50,
50 x 5 + 7 =257, 257 x 6 — 8 = 1534, 1534 x 7 + 9 = 10747,

7. Answer B

The series is
543 + (5)3 = 668, 668 + (6)2 = 704, 704 + (7)3 = 1047, 1047 + (8)2 =1111
1111 + (9)3 = 1840

8. Answer D

Add the previous number to get the next number.
ie 71 + 78 = 149, 149 + 78 = 227, 227 + 149 = 376, 376 + 227 = 603, 603 + 376 =979, …

9. Answer E

The series is
88×0.5 = 44, 44×1.5 =66, 66×2.5 = 165, 165×3.5 = 577.5, 577.5×4.5 = 2598.75

10. Answer A

The series is

3 x 2 + 3 =9, 9 x 3 + 4 = 31, 31 x 4 + 5 = 129, 129 x 5 +6 = 651, 651 x 6+ 7 = 3913

11. Answer B

I. 4X^2 – 9X -34 = 0

4X^2 – 17X+8X -34 = 0

X = 17/4, -8/4 = 17/4, -2

II. Y^2 + 20Y +51 = 0

Y^2 + 17Y +3Y +51 = 0

Y = -17, -3

X Y

17/4 > -17

17/4 > -3

-2 > -17

-2 > -3

Hence, X > Y

12. Answer E

I. 42X^2 – 115X + 47 = 0

42X^2 – 94X -21X+ 47 = 0

X = 94/42, 21/42

X = 47/21, 1/2

II. 54Y^2 + 79Y – 53 = 0

54Y^2 + 106Y -27Y – 53 = 0

Y = -106/54, 27/54

Y = -53/27, 1/2

X Y

47/21 > -53/27

47/21 > 1/2

1/2 > -53/27

1/2 = 1/2

13. Answer B

I. X^2 + 361 = 442

X^2 = 442 – 361= 81

X = √81 = 9

II. Y + √289 = √676

Y + 17 = 26

Y = 26 – 17 = 9

X Y

-9 < 9

9= 9

14. Answer A

I. 6X^2 – 14X -12 = 0

6X^2 – 18X+ 4X -12 = 0

(6X-18) (6X+4) = 0

X = 18/6, – 4/6 = 3, -2/3
II. 4Y^2 + 19Y +12 = 0
4Y^2 + 16Y+ 3Y +12 = 0
(4Y+16)(4Y+3) =0
Y = -16/4, -3/4 = -4, -3/4
X Y
3 > -4
3 > -3/4
-2/3 > -4
-2/3 > -3/4
Hence, X > Y

15. Answer C

I. 4X^2 – 23X +28 = 0
4X^2 – 16X-7X +28 = 0
X = 16/4, 7/4
∴ X= 4, 7/4
II. 12Y^2 – 25Y +7 = 0
12Y^2 – 21Y-4Y +7 = 0
Y = 21/12, 4/12
∴ Y = 7/4, 1/3
X Y
4 > 7/4
4 > 1/3
7/4 = 7/4
7/4 > 1/3

16. Answer D

Quantity1:
Speed =207 *(5/18) =57.5m/s
Time = (650/57.5) =11.3 sec
Quantity 2:
Speed of Train A = 250/25 = 10m/sec
Time taken to cross each other = (250+320) / (25+10) = 16.28sec
Quantity I < Quantity II

17. Answer D

Quantity 1:
5 years ago, A:B= 8:5 (we assume this as 8x and 5x)
2 years hence, A:B= 5:4
8x+7/5x+7 =5/4
32x+28= 25x+35
7x=7
=>x=1
The present age of Suba= 8x+5 =13 years
Quantity 2:
After 5 years, A:B= 3:4 (we assume this as 3x and 4x)

4 years hence, A:B= 29:39
3x-1/4x-1 = 29/39
117x-39=116x-29
=>x= 10
The present age of A= 3x-5 = 25 years
Quantity I < Quantity II

18. Answer D

Quantity 1:
Average of first 10 odd number = (1+3+5+7+9+11+13+15+17+19)/10=10
(or)
If the difference is equal, then the average will be the middle number. Here the middle no is 9 and 11. So, the average is (9+11)/2 = 20/2=10
Quantity 2:
Average of first 10 prime number = (2+3+5+7+11+13+17+19+23+29) =129/10 =12.9
Quantity I < Quantity II

19. Answer C

Quantity 1:
1/7 -1/9 = 9-7 / (9*7) = 2/63 = 1/31.5
Total time taken = 31.5 hrs
Quantity 2:
One tap can fill tank in 6 hours and another tap can fill the tank in15 hours
The total capacity of the tank is 30. (ie., LCM of 6 and 15)

Total hours	per hour capacity
Tap 1=> 6	5
Tap 2=> 15	2

Both tap are opened alternatively.
The first two hours the capacity of tap 1 and 2 is 7. So, 7*4= 28(8 hour capacity)
Remaining 2 will be there. Remaining will be filled by tap 1. So, 2/5 hr
The tank will be filled in 8 2/5 hrs
Quantity I > Quantity II

20. Answer D

Quantity1:
Probability = 4C2 /52C2 = 6/(26*51) = 1/221
Quantity 2:
Total Probability = 62 =36
Divisible by 2 = 18 possibilities
Probability = 18/36 = 1/2
Quantity I < Quantity II

21. Answer A

Let Expenditure Flipkart = Income Snapdeal = x
Income Flipkart = x × (100 + 60)/100 = 8x/5
Expenditure Snapdeal = x × 100/125 = 4x/5
Required ratio = Income Flipkart/Expenditure Snapdeal
= 8x/ 5 × 5/4x

= 2/1
= 2 : 1

22. Answer C

% Profit 2013 = 40%
% Profit 2014 = 45%
% Rise = (45 – 40)/40 × 100
= 500/40
= 12.5%

23. Answer E

% profit of Amazon in 2011 and % profit of Snapdeal in 2015 are equal and are 40%,
Total income = 94 × (100 + 40)/100
= 94 × 1.4
= 131.6 lakh

24. Answer B

% Profit 2013 = 48%,
Expenditure = 55.5 lakh
Income = 55.5 × (100 + 48)/100
= 55.5 × 1.48
= 82.14

25. Answer D

% Profit Amazon = 40%
Income Amazon = 91 lakh
Expenditure Amazon = 91 ×100/140
= 65 lakh
% Profit Flipkart = 50%,
Expenditure Flipkart = 91 lakh
Income Flipkart = 91 × 150/100
= 136.6 lakh
Difference = 136.5 – 65
= 71.5 lakh

26. Answer D

Direction (Q. 26-30):

Networks	Total users	Wire net users	Wireless net users
BSNL	5400	4374	1026
Airtel	8100	4050	4050
Reliance	5400	3456	1944
Idea	9900	8316	1584
MTS	16200	8262	7938
Total	45000	28458	16542

= 8316 : 28458
= 154 : 527

27. Answer A

= (1026 ×100)/45000
= 2.28%

28. Answer B

Ratio of wire net users and wireless net users in Idea

= 8316 : 1584

= 21 : 4

29. Answer C

Total number of wire net users = 28458

Total number of wireless net users = 16542

= (16542 ×100)/28458 = 58.13%

30. Answer E

Wire net users from MTS = 8262

Wire net users from Reliance= 3456

= 8262 – 3456

= 4806

31. Answer B

The total number of Green colour ball in Tennis = 50000

The total number of Green colour ball in Cricket

= 50000 × 3 / 2 = 75000

The total number of Balls in Cricket

= 75000 × 100 / 12 = 625000

32. Answer A

The total number of other colour Balls in Cricket after 2 years

= 150000 × 10 / 100 = 15000

For first year = 150000 + 15000 = 165000

= 165000 × 10 / 100 = 16500

For second year = 165000 + 16500 = 181500

= 181500

33. Answer E

The total number of Yellow colour ball two years ago in Tennis

= 250000 × 100 / 105

= 238095 one year ago

= 238095 × 100 / 105

= 226757 two years ago

= 226757

34. Answer C

Total Ball in Cricket = 1200000

Blue colour balls in Cricket = 1200000 × 26 / 100 = 312000

Blue colour balls in Tennis = 312000 × 5 / 3 = 520000

Total Balls in Tennis = 520000 × 100 / 30 = 1733333.3

= 1733333 = 17.3 lakh

35. Answer D

The Ratio between the number of Orange colour ball in Tennis and that of Blue colour ball in Cricket

Number of Orange colour ball in Tennis

= 859000 × 22/100

= 188980

Number of Blue colour ball in Cricket
= 786000 × 26/100
= 204360
Ratio = 188980 : 204360
= 37796 : 40872

36. Answer D

Total work= men * days
Total work =25*18 = 450
9 days all men worked = 25*9 =225
Remaining work = 450-225 = 225
(20*9) +(X*9) = 225
9X = 45
X =5 women

37. Answer C

Let's suppose cost price of the commodity = Rs 300
Selling price of 114th of the commodity = Rs (75 X 1.15) = Rs 86.25
Selling price of 116th of the commodity = Rs (50 X 1.25) = Rs 62.5
Selling price of the remaining commodity = Rs (175 X 1.1) = Rs 192.5
Hence total selling price = Rs (86.25 + 62.5 + 192.5) = Rs 341.25
Now overall profd obtained = Rs (341.25 – 300) = Rs 41.25
41.25 corresponds to 300.
Hence, 660 corresponds to 660 X 300/41.25 = 4800
Therefore cost price of the article = Rs 4800

38. Answer B

Let's assume that the required time = T years
Hence in 2nd case, (6336 – 4800) = (4800'8'T)/100
=> T = (1536'100)/(4800'8)
=> T = 4 years
Let's suppose that the principal amount be Rs P in 1St case.
Hence, P + (P'((5'4)/100)) = 7200
=> 1.2P = 7200
=> P = Rs 6000

39. Answer C

Let speeds of Kranthi, Shakthi and Bhakthi be denoted by k, s and b respectively.
It is given that Kranthi beats Shakthi by 10m, this means that while Kranthi has travelled 100m, Shakthi has travelled only (100-10) = 90m or 90%.
=> s X t'=0.9 X k X t'
=> s=0.9 X k …(1)
It is also given that Shakthi beats Bhakthi by 5 secs, this means that:
=> s X t=b X (t+5)=100 …(2)
Also, it is given that: k=2b ..(3)
Using (3) in (1), we get
=> s=0.9 X 2b=1.8b ..(4)
Using (4) in (2), we get

=> 1.8bt=bt+5b =>0.8bt=5b
=> t = 5b/0.8b = 6.25s.
Using this result in (2), we get s = 100/t = 100/6.25 = 16 m/s
Using this result in (1), we get k = sl(0.9) = 16/(0.9) = 17.78 m/s

40. Answer A

Let Shashi and Tinu's current ages be 'x' and 'y' years respectively.
Ages z years ago: 'x – z' and 'y – z'
x – z = (1/7) (y – z)
=>7x-7z=y – z
=> 7x – y = 6z —-(i)
Ages in z years from now: 'x + z' and 'y + z'
3(x + z) = y + z
=> 3x + 3z = y + z
=> y – 3x = 2z
=> 3y – 9x = 6z …(ii)
Equating (ii) and (i):
=> 7x – y = 3y – 9x
=> 16x = 4y
=> y/x = 4/1

41. Answer B

Let the cost price of one horse and one cow be Rs H and Rs C respectively.
According to the question; 2H + 3C = 72000… (1)
According to the question; 2(1.15H) + 3(0.95C) = 80000
=> 2.3H + 2.85C = 80000… (2)
(2) – (1) gives 0.311- 0.15C = 8000
=> H – 0.5C = 80000/3 … (3)
Solving (1) and (3), we get H = 29000 and C = 4667
H + C = 33667

42. Answer D

Total expenditure = 40 X 50 = Rs. 2000
30% of 40 kg = 12 kg of rice is sold at the rate of Rs. 60 per kg.
Let the remaining 28 kg of rice be sold at the rate of Rs. x per kg.
According to the question,
12 * 60 + 28 * x = 2000 * (120/100)
28x = 2400 – 720
28x = 1680
x = Rs. 60

43. Answer D

Water poured in 12 min = (5 * 3′ 1500) (12 * 60) cm3
Let h be the height of water in reservoir = 1800 * 1500 * h cm3
h = [(5 * 3 * 1500)* 12 * 60] / (1800 * 1500)
= 6 cm

44. Answer A

Let the filler tap can fill the tank in X hours.

According to question: 1/X – 1/12 = -1/16
1/X=1/12-1/16=4/192=1/48
X=48 hours
Therefore, capacity of tank=48*60*5
= 14400 liters.

45. Answer E

Let the original number be (10a + b) and one-third of that number be (10x + y).
Given, b = x …(i)
a = y – 2 => y = (a + 2) …(ii)
a + b = 6 …(iii)
Also, 10a + b = 3 * (10x + y)
=> 10a + b = 3 *{10b + (a + 2)} [Replacing x and y from equations i and ii]
=> 10a + b = 30b + 3a + 6
=> 7a – 29b = 6 …(iv)
=> 36a = 180 [(29*(iii) + iv]
=> a = 5
=> b = 1 [substituting the value of a in (iii)]
Original number is 51.

46. Answer C

Let the ages of father and son be F and S years respectively.
Hence, F + S = 70… (1)
According to the question, F – 20 = S
=> F – S = 20… (2)
From Equation (1) and (2) we will get,
F = 45 years and S = 25 years
Hence son's age 10 years from now = 25 + 10 = 35 years

47. Answer C

B= 11C/17, A=3B/4=33C/68
So, 33C/68+ 11C/17+C=145
Therefore, age of C=68 years, A=33 years
C-A=68-33=35 years
Hence, difference between the ages of A and C=35 years

48. Answer C

Let salary of A=X
B gets=58X/100
He spends 28%+8%=36%, i.e. left with 64% of (58X/100)
So (64/100)*(58/100)*X=24128
X=24128*100*100/(64*58)=Rs 65000
Hence, salary of A=Rs 65000

49. Answer C

Let the numerator and denominator be x and y respectively.
Then, (x+2)/(y+3)= 7/9
=> 9(x + 2) = 7(y + 3)
=> 9x – 7y = 3 …. (i)

(x-1)/(y-1)= 4/5
=> 5(x -1) = 4(y-1)
=> 5x – 4y = 1 …. (ii)
Solving (i) and (ii), we get
X = 5, Y = 6
Required fraction = x/y=5/6
50.Answer C
Tank filled in 2 hours = 2/8
= 1/4
Tank left = 3/4
In 12 hours, 3/4th tank is filled by A+B
In 1 hour, 3/(4*12) = 1/16 tank is filled
Tank filled by C in 1 hour = 1/8 – 1/16
= (2-1)/16
= 1/16
C fills in 16 hours.