



Special Aptitude Sectional Test -2

Quantitative Aptitude

Directions (Q. 1-5): What approximate value should come in place of question mark in the following questions? (you are not expected to calculate the exact value)

1). $[(\sqrt{530} \times 36.003) \div 47.987] \times ? = 5863.10376$

- A. 640
- B. 750
- C. 340
- D. 360
- E. 680

2). $(77.987\% \text{ of } 358) + (68.55\% \text{ of } 729) = ?$

- A. 780
- B. 705
- C. 840
- D. 825
- E. 695

3). $\sqrt{624.995 + (4.9989)^2} = ? \div (1 / 4.9900865)$

- A. 18
- B. 34
- C. 44
- D. 10
- E. 25

4). $989.001 + 1.00982 \times 76.792 = ?$

- A. 1150
- B. 1070
- C. 1240
- D. 1188
- E. 1044

5). $63.9872 \times 9449.8780 \div 243.003 = (?)^2$

- A. 60
- B. 75
- C. 90
- D. 40
- E. 50

Directions (Q. 6-10): In each of these questions a number series is given. In each series only one number is wrong. Find out the wrong number.

6). 7 16 27 40 46

- A. 7
- B. 16
- C. 27
- D. 40
- E. 46

7). 729 1331 2497 3375 4913



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- A. 729
- B. 1331
- C. 3375
- D. 2497
- E. 4913

8). 80 119 166 221 223

- A. 80
- B. 119
- C. 166
- D. 192
- E. 223

9). 8 8.5 11.5 14 17

- A. 8
- B. 5
- C. 5
- D. 14
- E. 17

10). 439 778 1456 2812 5624

- A. 439
- B. 778
- C. 1456
- D. 2812
- E. 5624

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

- A) if $x > y$
- B) if $x \geq y$
- C) if $x < y$
- D) if $x \leq y$
- E) if $x = y$ or the relationship cannot be established

11. I. $\frac{3}{x+y} + \frac{2}{x-y} = 2$

II. $\frac{9}{x+y} - \frac{4}{x-y} = 1$

12. I. $x^7 - (28 \times 7)^{7.5} / (x)^{(1/2)} = 0$

II. $\sqrt[3]{y} - 27 = 0$

13. I. $(x^3 - 6x^2 + 11x - 6)/(x - 1) = 0$

II. $(2y^3 - 3y^2 - 3y + 2)/(y + 1) = 0$

14. I. $(4x^3 - 7x + 3)/(x - 1) = 0$

II. $(y^3 - 10y^2 - y + 10)/(y + 1) = 0$

15. I. $(2x + 3)^2 - 81 = 0$

II. $3y^2 - 5y - 12 = 0$

Directions (16-20) : Each question below contains a statement followed by Quantity I and Quantity II. Find the value of both to find the relationship among them. Mark your answer accordingly.



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16. The difference between a two-digit number and the number obtained by interchanging the positions of its digits is 36.

Quantity I: What is the difference between the two digits of that number?

Quantity II: What is the difference between the sum and the difference of the digits of the number if the ratio between the digits of the number is 1 : 2?

- A. Quantity I > Quantity II
- B. Quantity I \geq Quantity II
- C. Quantity II > Quantity I
- D. Quantity II \leq Quantity I
- E. Quantity I = Quantity II or Relation cannot be established

17. Through T, the mid-point of the side QR of a triangle PQR, a straight line is drawn to meet PQ produced to S and PR at U, so that PU= PS

Quantity I: If length of UR=2 units then the length of QS is ?

Quantity II: $2\sqrt{2}$ units

- A. Quantity I > Quantity II
- B. Quantity I \geq Quantity II
- C. Quantity II > Quantity I
- D. Quantity II \leq Quantity I
- E. Quantity I = Quantity II or Relation cannot be established

18. The dimensions of a certain machine are 48" X 30" X 52". If the size of the machine is increased proportionately until the sum of its dimensions equals 156".

Quantity I: What will be the increase in the shortest side?

Quantity II: If sum of its dimensions is decreased by 8" from 156", then what will be the increase in the longest side?

- A. Quantity II > Quantity I
- B. Quantity I \geq Quantity II
- C. Quantity I > Quantity II
- D. Quantity II \leq Quantity I
- E. Quantity I = Quantity II or Relation cannot be established

19. A wooden door wedge is in the shape of a sector of a circle of radius 10 cm with angle 24 degree and constant thickness 3 cm.

Quantity I: Find the volume of wood used in making the wedge.

Quantity II: $20 \pi \text{ cm}^3$

- A. Quantity II > Quantity I
- B. Quantity I \geq Quantity II
- C. Quantity I > Quantity II
- D. Quantity II \leq Quantity I
- E. Quantity I = Quantity II or Relation cannot be established

20. The cost of Type 1 material is Rs. 15 per kg and Type 2 material is Rs.20 per kg. If both Type 1 and Type 2 are mixed in the ratio of 2 : 3.

Quantity I: what is the price per kg of the mixed variety of material?

Quantity II: what is the price per kg of the mixed variety of material if both Type 1 and Type 2 are mixed in the ratio of 3 : 2?

- A. Quantity II > Quantity I



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- B. Quantity I \geq Quantity II
- C. Quantity I $>$ Quantity II
- D. Quantity II \leq Quantity I
- E. Quantity I = Quantity II or Relation cannot be established

Directions (Q. 21-25): Study the table carefully to answer the questions that follow. Number of students attending exams in eight different cities and the percentages of Clerk candidates, PO candidates and SO candidates among them.

Cities	Total Number of Students	Percentage of		
		Clerk	PO	SO
Kanpur	56250	24	36	40
Kolkata	64000	16	54	30
Chennai	45525	20	44	36
Mumbai	36800	39	33	28
Hyderabad	56340	45	30	25
Delhi	35580	15	35	50
Bangalore	62350	38	28	34
Jaipur	48300	21	44	35

21. The total number of PO candidates attending exam in Jaipur forms approximately what per cent of the total number of PO candidates attending exams in all the cities?

- A. 12.5
- B. 15.4
- C. 14.8
- D. 13.7
- E. 19.6

22. What is the total number of SO candidates attending exam in Chennai?

- A. 17859
- B. 16389
- C. 21568
- D. 12354
- E. 20568

23. What is the ratio of total number of Clerk candidates attending exam in Mumbai to the total number Clerk candidates attending exam in Jaipur?

- A. 208 : 147
- B. 130 : 208
- C. 208 : 130
- D. 170 : 152
- E. 147 : 208

24. What is the approximate average number of PO candidates attending exam in all the cities?

- A. 15421
- B. 17786



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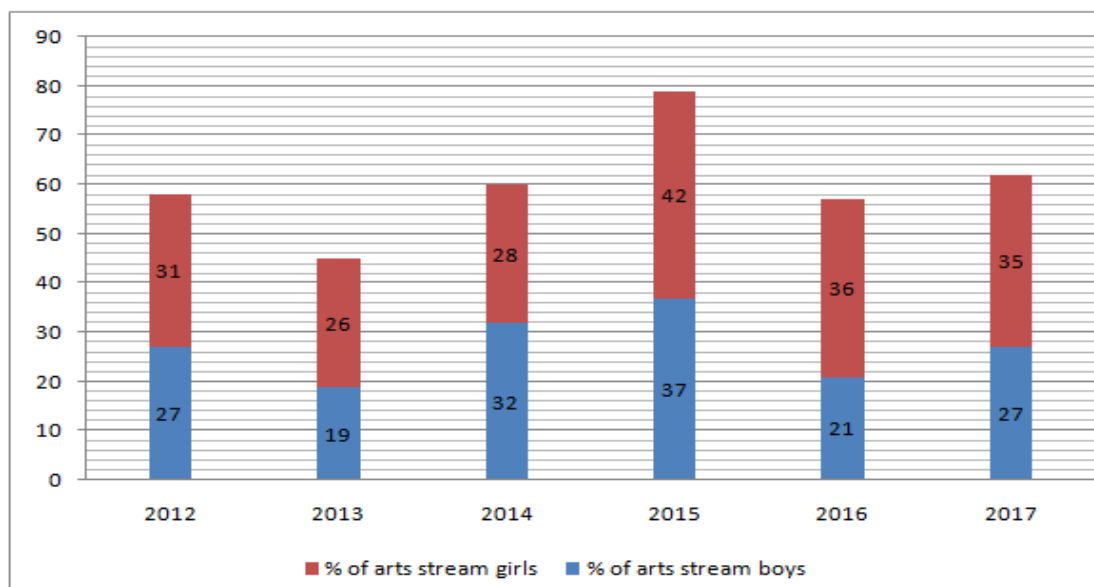
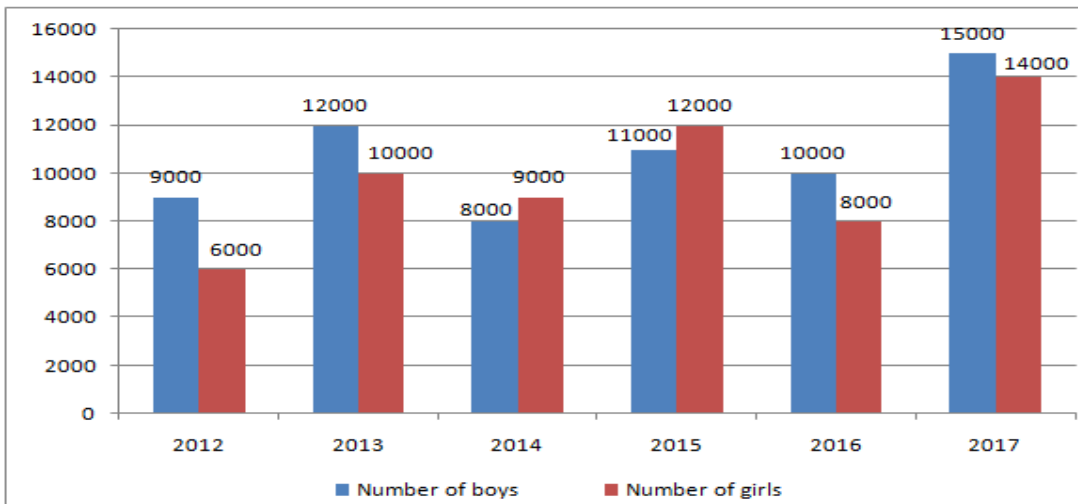
- C. 18258
- D. 16146
- E. 19381

25. The number of Clerk candidates attending exam in Hyderabad forms what per cent of Clerk candidates attending exam in Delhi? (Rounded off to two digits after decimal)

- A. 571.05%
- B. 475.04%
- C. 325.56%
- D. 496.25%
- E. 291.50%

Directions (Q. 26-30): Study the following information carefully and answer the questions given below.

Following bar-graph shows the total number of boys and girls (from engineering and art stream) selected in TCS Campus interview during the period 2012 to 2017 and the another bar graph shows the percentage of Arts stream boys among total boys and the percentage of Arts stream girls among total girls selected in interview.





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26. What is the ratio of the girls selected from engineering stream in the year 2012 to the number of girls selected from arts stream in the year 2016?

- A. 10 : 7
- B. 19 : 12
- C. 22 : 15
- D. 24 : 17
- E. 23 : 16

27. In the year 2016, the total number of boys selected from arts stream is what percentage of the total number of girls selected from engineering stream? (Find approximate value only)

- A. 30%
- B. 35%
- C. 41%
- D. 49%
- E. 45%

28. In the year 2015, the number of boys selected from engineering stream is what percentage more than the number of boys selected from arts stream?

- A. 70.27%
- B. 63.54%
- C. 73.54%
- D. 60.92%
- E. 75.84%

29. What is the difference between the total number of boys selected from engineering stream and the total number of girls selected from engineering stream in all the six years together?

- A. 8570
- B. 8090
- C. 8250
- D. 8310
- E. 8010

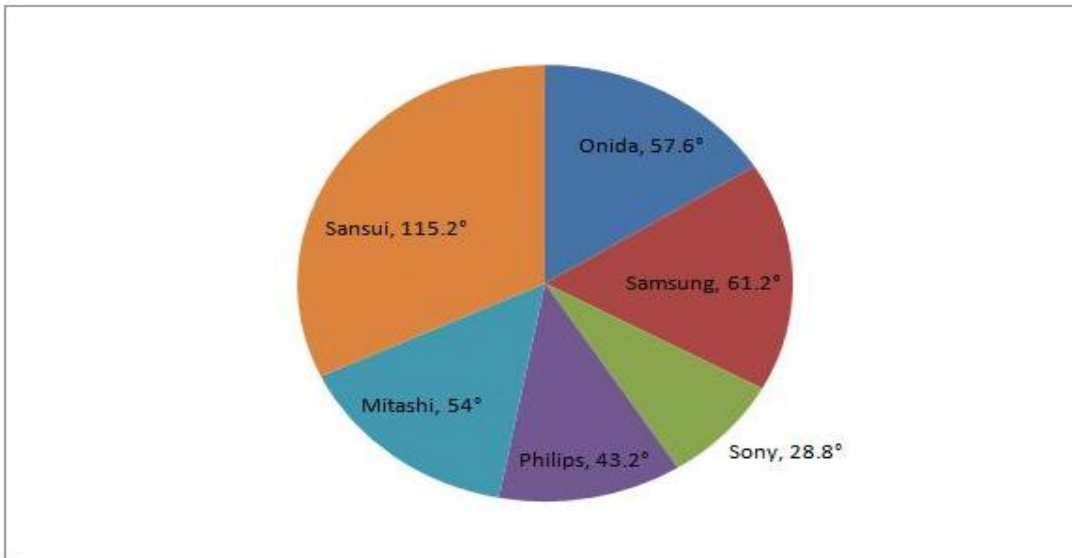
30. What is the average number of girls selected from arts stream in all six years?

- A. 3000
- B. 3300
- C. 3900
- D. 3100
- E. 3500

Directions (Q. 31-35): Following pie-chart shows the proportion of number of TV's produced on different companies. The table shows the percentage of LED TV among them.



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Company	% LED TV
Onida	20%
Samsung	30%
Sony	45%
Philips	35%
Mitashi	42%
Sansui	45%

31. If the total number of TV's produced in Onida is 1760, what is the total number of LCD TV produced in Samsung?

- A. 1316
- B. 1302
- C. 1309
- D. 1310
- E. 1305

32. If the total number of TV's produced in all six companies together is 11000, what is the difference between the number of LCD TV and that of LED TV in Mitashi?

- A. 257
- B. 264
- C. 266
- D. 250
- E. 270

33. If the total number of LCD TV produced in Sansui is 1936 then the number of LED TV produced in Sansui is what percentage of the total number of TV's produced in all the six companies together?

- A. 10.5%
- B. 11.6%
- C. 12.3%
- D. 14.4%
- E. 17.2%



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34. If the number of LED TV produced in Philips is 462, what is the total number of the TV's produced in Sony?

- A. 900
- B. 850
- C. 800
- D. 880
- E. 910

35. If the total number of LCD TV produced in Philips is 858, what is the average number of LED TV produced in Sony and Philips together?

- A. 439
- B. 436
- C. 416
- D. 428
- E. 429

36) 15 men can do the work in 18 days. They started working and after 9 days, they found that $\frac{2}{5}$ of work had been completed. How many more workers are needed to complete the remaining work on time?

- A. 6
- B. 8
- C. 10
- D. 12
- E. none of these

37. Two trains A and B are running same direction at the speed of 80m/s and 60m/s, the total time taken by them to cross a platform with a length of 240 m is 17 seconds. If their speed is reduced by 50% then the time taken by the train B to cross the same platform is 2 seconds more than the time taken by the train A to cross the same platform. Find the sum of length of two trains.

- A. 450 m
- B. 400 m
- C. 650 m
- D. 700 m
- E. 550 m

38. A and B had Rs.40000 and Rs.50000 respectively and they invest for 2 years and 3 years respectively. Out of the total amount, the percentage of the amount deposited by A and B is equal. A and B invested with bank P at the rate of 20% compound interest and bank U at the rate of 25% simple interest respectively. If the total interest would receive by them from their respective bank is Rs.27550, then find the percentage of amount A or B invested?

- A. 50%
- B. 20%
- C. 30%
- D. 40%
- E. 25%

39. In an examination Shiva score 75% of marks, Shivani scores 80% of marks and Krish scores 50% of marks, If the maximum marks in the examination is a three-digit number, whose sum is 10 and the middle digit is equal to the sum of the other two digits. The numbers will be increased by 297, if its digits are reversed. Approximately what is the average mark obtained by Mahesh, Nitesh and Rithesh?



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- A. 107
- B. 124
- C. 105
- D. 115
- E. Cannot be determined

40. Average of the five-consecutive odd number is x and five- consecutive even number is y . If the smallest odd number is less than the square of first odd prime number by smallest even number and the sum of the middle even number and largest odd number is 75, then find the ratio of the sum of even numbers to sum of odd numbers

- A. 29:31
- B. 2:3
- C. 11:13
- D. 19:17
- E. 40:31

41. Ramesh invested certain amount of money in a savings account which offers 10% compound interest per annum for two years. If Ramesh wanted a payment of Rs 400 at the end of first year and got Rs 550 at the end of second year then what is the approximate amount of money invested by Ramesh?

- A. Rs 900
- B. Rs 775
- C. Rs 800
- D. Rs 850
- E. Rs 820

42. A, B and C started a business by investing Rs 25000, Rs 40000 and Rs 50000 respectively. if they invested for 10 months, 8 months and 6 months respectively. then what is the highest profit obtained anyone of these three if it is known that total profit obtained at the end of the year is Rs 87000?

- A. Rs 28000
- B. Rs 30000
- C. Rs 25000
- D. Rs 32000
- E. Rs 31500

43. In class A, the ratio of boys to girls is 2 : 3. In class B the ratio of boys to girls is 4 : 5. If the ratio of boys to girls in both the classes put together is 3 : 4, what is the ratio of number of girls in class A to number of boys in class B?

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

44. One-third of 24 liters of 75% milk, one-fourth of 32 liters of 62% of milk and one-fifth of 40 liters of 63% milk are mixed together. How many liters of the resulting mixture shall be replaced by pure water, so that the ratio of milk to water after replacement is 4:5?

- A. 9.6
- B. 16.8
- C. 8.0



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- D. 16.0
E. 5.8
45. A and B throw a dice one after the other. If A starts the game, what is the probability that B gets a value more than what A gets?
- A. $1/2$
B. $6/11$
C. $5/12$
D. $4/9$
E. None of these
46. The bus fare for one person is Rs.420 from Dehradun to Delhi and the train fare between the same places for one person is equal to three-fourths of the bus fare for two persons between the same places. What is the total fare paid by 3 persons travelling by bus and 4 persons travelling by train between the two places?
- A. Rs.3406
B. Rs.3360
C. Rs.3440
D. Rs.3460
E. None of these
47. A reputed company sells a wrist watch to a wholesaler making a profit of 10%. The wholesaler, in turn, sells it to the retailer making a profit of 10%. A customer purchases it by paying Rs. 990. Thus the profit of retailer is $2(3/11)\%$ What is the cost incurred by the the company to produce it?
- A. 700
B. 600
C. 800
D. 900
E. None of these
48. In an examination, the marks obtained by Priya is 40% less than the marks obtained by Rithi, then marks obtained by Rithi is how much percent more than the marks obtained by Priya?
- A. $66 \frac{2}{3}\%$
B. $33 \frac{3}{4}\%$
C. $44 \frac{1}{3}\%$
D. $55 \frac{2}{3}\%$
E. None of these
49. Asha and Nisha spent 60% and 75% ofb their respective monthly salaries. Nisha kept 60% of remaining as savings and gave the remaining rupees 2100 to her sister. What was the Asha's monthly expenditure if her monthly salary was 25% less than that of Nisha?
- A. 2750
B. 10,450
C. 20,000
D. 9,450
E. None of these
50. A can is full of paint. Out of this 8 litres is removed and subtited with thinner. This process is repeated once more. Now the ratio of the paint to the thinner is 144 : 25. What is the full capacity of the can?
- A. 104 litres



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- B. 105 litres
- C. 110 litres
- D. 100 litres
- E. None of these

Answers with explanation:

1). Answer C

$$[(\sqrt{530} \times 36.003) \div 47.987] \times ? = 5863.10376$$
$$? = 5863 / [(\sqrt{529} \times 36) \div 48] = 5863 / [(23 \times 36) \div 48] = 340$$

2). Answer A

$$? = (77.987\% \text{ of } 358) + (68.55\% \text{ of } 729)$$
$$? = [(78/100) \times 358] + [(69/100) \times 725]$$
$$= 280 + 500 = 780$$

3). Answer D

$$\sqrt{624.995} + (4.9989)^2$$
$$= ? \div (1 / 4.9900865)$$

or, $\sqrt{625} + (5)^2 = ? \div (1/5)$

$$? = 1/5 (25 + 25) = 10$$

4). Answer B

$$? = 989.001 + 1.00982 \times 76.792$$
$$= 990 + 1 \times 76.8 = 1066.8 = 1070$$

5). Answer B

$$(?)^2 = 63.9872 \times 9449.8780 \div 243.0034$$
$$= 64 \times 9450 \div 243 = 64 \times 39 = 2496$$

Now, $(?)^2 = 2496$

$$? = 50$$

6). Answer E

The series is $5 \times 1 + 2 = 7$, $6 \times 2 + 4 = 16$, $7 \times 3 + 6 = 27$, $8 \times 4 + 8 = 40$, $9 \times 5 + 10 = 55$.
Hence, there should be 55 in place of 46.
Alternate Method: +9, +11, +13, +15

7). Answer D

The series is 9^3 , 11^3 , 13^3 , 15^3 , 17^3 ,
Hence, there should be 2197 in place of 2497.

8). Answer E

The series is $9^2 - 1$, $11^2 - 2$, $13^2 - 3$, $15^2 - 4$, $17^2 - 5$,
Hence, there should be 284 in place of 223.

9). Answer B

The series is $8 + 1.5 = 9.5$, $9.5 + 2 = 11.5$, $11.5 + 2.5 = 14$, $14 + 3 = 17$
Hence, there should be 9.5 in place of 8.5.

10). Answer E

The series is +339, +678, +1356, +2712,
Hence, there should be 5524 in place of 5624.

11). Answer A

I. $3/(x+y) + 2/(x-y) = 2$



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$$\text{II. } 9/(x+y) - 4/(x-y) = 1$$

Let, $x + y = P$ and $x - y = Q$

$$3/P + 2/Q = 2 \text{ ---- (i)}$$

$$9/P - 4/Q = 1 \text{ ---- (ii)}$$

On solving (i) $\times 3$ and (ii) we get,

$$-10/Q = -5$$

$$Q = 2.$$

Substituting the value of Q in (i), we get

$$3/P + 2/2 = 2$$

$$3/P = 2 - 1$$

$$P = 3$$

$$x + y = P = 3;$$

$$x - y = Q = 2$$

$$\therefore x = 5/2 = 2.5$$

$$y = 1/2 = 0.5$$

Hence, $x > y$.

12). Answer C

$$\text{I. } x^7 - [(28 \times 7)^{7.5} / x^{(1/2)}] = 0$$

$$x^7 \times x^{(1/2)} - (28 \times 7)^{7.5} = 0$$

$$x^{7.5} - (196)^{7.5} = 0$$

$$x = 196$$

$$\text{II. } \sqrt[3]{y} - 27 = 0$$

$$\sqrt[3]{y} = 27$$

$$\therefore y = (27)^3$$

$$y = 19683$$

Hence, $x < y$.

13). Answer B

$$\text{I. } (x^3 - 6x^2 + 11x - 6)/(x - 1) = 0$$

$$(x-1)(x^2 - 5x + 6) = 0$$

$$x^2 - 5x + 6 = 0$$

$$(x - 3)(x - 2) = 0$$

$$x = 3, 2$$

$$\text{II. } (2y^3 - 3y^2 - 3y + 2)/(y + 1) = 0$$

$$(y+1)(2y^2 - 5y + 2) = 0$$

$$(2y-1)(2y-4) = 0$$

$$y = 1/2, 2$$

Hence, $x \geq y$.

14). Answer C

$$\text{I. } (4x^3 - 7x + 3)/(x - 1) = 0$$

$$(x-1)(4x^2 + 4x - 3) = 0$$

$$(4x-2)(4x+6) = 0$$

$$x = 1/2, -3/2$$

$$\text{II. } (y^3 - 10y^2 - y + 10)/(y + 1) = 0$$

$$(y + 1)(y^2 - 11y + 10) = 0$$



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$$(y-1)(y-10) = 0$$

$$y=1,10$$

Hence, $x < y$.

15). Answer E

$$I. (2x + 3)^2 - 81 = 0$$

$$(4x^2 + 12x + 9) - 81 = 0$$

$$4x^2 + 12x - 72 = 0$$

Divided by 4 we get,

$$x^2 + 3x - 18 = 0$$

$$(x+6)(x-3) = 0$$

$$x = -6, 3$$

$$II. 3y^2 - 5y - 12 = 0$$

$$(3y-9)(3y+4) = 0$$

$$y = 3, -4/3$$

Hence, the relationship cannot be established.

16). Answer C

I: Let the ten's digit be x and unit's digit be y .

$$\text{Then, } (10x + y) - (10y + x) = 36$$

$$9(x - y) = 36$$

$$x - y = 4.$$

II: Since the number is greater than the number obtained on reversing the digits, so the ten's digit is greater than the unit's digit.

Let ten's and unit's digits be $2x$ and x respectively.

$$\text{Then, } (10 \times 2x + x) - (10x + 2x) = 36$$

$$9x = 36 \quad x = 4.$$

$$\text{Required difference} = (2x + x) - (2x - x) = 2x = 8$$

17). Answer C

I. We have $QT = TR$ and $PU = PS$. $UR = 2$ units

We draw $RV \parallel PS$ that meets SU extended at V .

In ΔQST and ΔTVR $\angle QTS = \angle VTR$ [Opposite angles]

$\angle QST = \angle TVR$ [Alternate angles as $PS \parallel VR$]

$QT = TR$

$\therefore \Delta QST$ and ΔTVR are congruent.

$$\therefore QS = VR \text{ ----- (i)}$$

Now, $\angle QST = \angle PUS = \angle VUR = \angle UVR$

\therefore In ΔUVR

$$\angle VUR = \angle RVU$$

$$\text{or, } RV = UR = 2 \text{ ----- (ii)}$$

From (i) and (ii)

$$QS = VR = UR = 2 \text{ units}$$

$$II. 2\sqrt{2} = 2.828 \text{ units}$$

So, $II > I$.

18). Answer A

I. Sum of present dimension $48 + 30 + 52 = 130$.



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New dimension =156.

Increase in dimension = 26.

Ratio of dimensions = 48:30:52 = 24:15:26

Therefore increase in the shortest side $15 \times (26) / (24+15+26) = 6$

II. Sum of present dimension $48+30+52=130$.

New dimension =156 – 8 = 148.

Increase in dimension = 18.

Ratio of dimensions = 48:30:52 =>24:15:26

Therefore increase in the shortest side = $26 \times (18) / (24+15+26) = 7.2$

Hence I < II.

19). Answer E

I. The area of the top face of the wedge is the area of a sector of radius 10 cm and angle 24 degree.

Area = $24 \text{ degree} / 360 \text{ degree} \times \pi \times 10^2 = 20\pi / 3 = 20.94 \text{ cm}^2$

The volume of the wedge = Area $\times 3 = 20 \pi = 62.83 \text{ cm}^3$

II. $20 \pi \text{ cm}^3$

Hence I = II.

20). Answer C

I. Cost Price (CP) of Type 1 material is Rs. 15 per kg

Cost Price (CP) of Type 2 material is Rs. 20 per kg

Type 1 and Type 2 are mixed in the ratio of 2 : 3.

Hence Cost Price(CP) of the resultant mixture

$$= \{(15 \times 2) + (20 \times 3)\} / (2+3)$$

$$= (30+60) / 5 = 90 / 5 = 18$$

Price per kg of the mixed variety of material = Rs.18.

II. Cost Price (CP) of Type 1 material is Rs. 15 per kg

Cost Price (CP) of Type 2 material is Rs. 20 per kg

Type 1 and Type 2 are mixed in the ratio of 3 : 2.

Hence Cost Price(CP) of the resultant mixture

$$= \{(15 \times 3) + (20 \times 2)\} / (2+3)$$

$$= (45+40) / 5 = 85 / 5 = 17$$

Price per kg of the mixed variety of material = Rs.17.

Hence I > II.

21). Answer D

Cities	Clerk Candidates	PO Candidates	SO Candidates
Kanpur	13500	20250	22500
Kolkata	10240	34560	19200
Chennai	9105	20031	16389
Mumbai	14352	12144	10304
Hyderabad	25353	16902	14085
Delhi	5337	12453	17790
Bangalore	23693	17458	21199
Jaipur	10143	21252	16905
Total	111723	155050	138372



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Required percentage = (Number of PO candidates attending exam in Jaipur /Number of PO candidates attending exam in all cities) \times 100
= $(21252/155050) \times 100$
= 13.7%

22). Answer B

Required number = $(45525 \times 36)/100$
= 16389

23). Answer A

Required ratio = $(36800 \times 39) : (48300 \times 21)$
= 1435200 : 1014300
= 208 : 147

24). Answer E

Number of PO candidates
Total = 155050
Required average = $155050/8$
= 19381.25 = 19381

25). Answer B

Number of Clerk candidates attending exam in Hyderabad = 45% of 56340
= $(45 \times 56340)/100 = 25353$
Number of Clerk candidates attending exam in Delhi = 15% of 355080
= $(15 \times 355080)/100 = 5337$
Required percentage
= $(25353/5337) \times 100$
= 475.04%

26). Answer E

Engineering stream girls 2012 = $6000 \times 69/100$
= 4140
Arts stream girls 2016 = $8000 \times 36/100$
= 2880
Ratio = $414/288$
= $23/16$
= 23 : 16

27). Answer C

Arts stream boys = $10000 \times 21/100$
= 2100
Engineering stream girls = $8000 \times 64/100$
= 5120
Required % = $2100/5120 \times 100$
= 41%

28). Answer A

Engineering stream boys = 63%
Arts stream boys = 37%
Required % = $(63 - 37)/37 \times 100$
= $2600/37$



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= 70.27%

29). Answer D

Engineering stream boys = 47510

Engineering stream girls = 39200

Difference = 47510 – 39200

= 8310

30). Answer B

Arts stream girls = $(6000 \times 0.31 + 10000 \times 0.26 + 9000 \times 0.28 + 12000 \times 0.42 + 8000 \times 0.36 + 14000 \times 0.35)$

= 1860 + 2600 + 2520 + 5040 + 2880 + 4900 = 19800

Average = 19800/6

= 3300

31). Answer C

LCD TV in Samsung

= $\{(1760 \times 360)/57.6\} \times 61.2/360 \times 70/100$

= 1309

32). Answer B

The total number of TV's produced in Mitashi

= $11000 \times 54/360 = 1650$

Number of LED TV in Mitashi = $1650 \times 42/100 = 693$

Number of LCD TV in Mitashi = $1650 - 693 = 957$

Difference = $957 - 693 = 264$

33). Answer D

Number of LED TV in Sansui = $45 \times 1936/55 = 1584$

Total TV produced in Sansui = $1584 + 1936 = 3520$

Total number of TV's produced in all six companies

= $360/115.2 \times 3520 = 11000$

Required % = $1584/11000 \times 100$

= 14.4%

34). Answer D

LED TV in Philips is 35%

So total number of TV's produced in Philips

= $462 \times 100/35 = 1320$

Total number of TV's produced in Sony

= $28.8/360 \times \{(360 \times 1320)/43.2\} = 880$

35). Answer E

Number of LED TV in Philips

= $858 \times 35/65 = 462$

Number of LED TV in Sony

= $\{(28.8/43.2 \times (462 \times 858))\} \times 45/100 = 396$

Average = $396 + 462/2 = 429$

36). Answer B

Total work = $15 \times 18 = 270$

After 9 days work done = $270 \times (2/5) = 108$

Remaining Work = $270 - 108 = 162$



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$$\begin{aligned}M_1 * D_1 / W_1 &= M_2 * D_2 / W_2 \\(15 * 9) / 108 &= ((15+x) * 9) / 162 \\15 * 9 * 162 &= 9 * 108 * (15+x) \\15 * 162 &= 108 * (15+x) \\2430 / 108 &= 15+x \\22.5(23 \text{ approx}) &= 15+x \\23-15 &= x \\8 &= x\end{aligned}$$

37). Answer D

Let the length of train A and B are x and y respectively

Given,

$$\frac{x + 240}{80} + \frac{y + 240}{60} = 17$$

$$\Rightarrow 6x + 8y = 4800 \text{ -----(1)}$$

$$\frac{x + 240}{40} + 2 = \frac{y + 240}{30}$$

$$\Rightarrow 3x = 4y \text{ -----(2)}$$

Solve the equation (1) and (2), we get x = 400 m and y = 300 m

Required sum = 400 + 300 = 700 m

38). Answer A

Given,

$$40000 \times \frac{x}{100} \times \frac{44}{100} + 50000 \times \frac{x}{100} \times \frac{25}{100} \times 3 = 27550$$

$$176x + 375x = 27550$$

$$\Rightarrow 551x = 27550 \Rightarrow x = 50$$

39). Answer C

X is the 100th place digit

Y is the 10th place digit

Z is the unit place digit

Given,



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$$x + y + z = 10 \text{ -----(1)}$$

=> $x + z = y$ substitute in equation (1), we get $2y = 10 \Rightarrow y = 5$

$$\Rightarrow x + z = 5 \text{ -----(2)}$$

$$100x + 10y + z + 297 = 100z + 10y + x$$

$$\Rightarrow 99x - 99z = -297 \text{ -----(3)}$$

Solve the equation (2) and (3), we get $x = 1$ and $z = 4$

$$\text{Required average} = \frac{\frac{75}{100} \times 154 + \frac{80}{100} \times 154 + \frac{50}{100} \times 154}{3}$$

$$\Rightarrow \frac{115.5 + 123.2 + 77}{3} \approx 105$$

40). Answer E

Let consider consecutive even numbers $x, x+2, x+4, x+6, x+8$ and consecutive odd numbers $y, y+2, y+4, y+6, y+8$

$$y + 9 = x \Rightarrow x - y = 9 \text{ -----(1)}$$

$$x + 4 + y + 8 = 75$$

$$\Rightarrow x + y = 63 \text{ -----(2)}$$

Solve the equation (1) and (2), we get $x = 36$

$$\text{Required ratio} = 200:155 = 40:31$$

41). Answer E

Let the amount invested by Ramesh is Rs P.

Hence according to the question, $1.1(1.1P - 400) = 550$

$$\Rightarrow 1.1P - 400 = 500$$

$$\Rightarrow 1.1P = 900$$

$$\Rightarrow P = \text{Rs } 818.18 = \text{Rs } 820 \text{ (Approx)}$$

42). Answer D

Ratio in which profit will be divided between A, B and C = $(25000 \times 10) : (40000 \times 8) : (50000 \times 6)$
 $= 25 : 32 : 30$

It is clear that highest share of profit will be obtained by B.

Hence amount of money B will get = $\text{Rs } (87000 \times 32/87) = \text{Rs } 32000$

43). Answer E

Let the number of students in the class A = $100n$

Hence number of boys in class A = $40n$

And the number of girls in class A = $60n$

Let's assume that the number of students in class B = $90q$

Therefore number of boys in class B = $40q$

And the number of girls in class B = $50q$

Now according to the question, $(40n+40q)/(60n+50q)=3/4$

$$\Rightarrow (4n+4q)/(6n+5q)=3/4$$

$$\Rightarrow 16n + 16q = 18n + 15q$$

$$\Rightarrow q = 2n$$

Hence required ratio = $60n/40q=3n/2q=3/4$

44). Answer C

Volume of the mixture = $24 \times 1/3 + 32 \times 1/4 + 40 \times 1/5 = 24$ liters



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Volume of milk in the mixture = $8 \times 0.75 + 8 \times 0.62 + 8 \times 0.63 = 16$ liters

Suppose 'N' liters of the mixture are replaced with water.

Volume of milk reduced = volume of water increased = $16N/24 = 2N/3$

Ratio of milk and water in the resultant = 4:5

$$(16 - 2N/3) / (8 + 2N/3) = 4/5$$

$$80 - 10N/3 = 32 + 8N/3$$

$$6N = 48$$

$$N = 8 \text{ liters}$$

45). Answer C

The favourable cases $\{(1, 2), (1, 3), (1, 4), (1, 5), (1, 6), (2, 3), (2, 4), (2, 5), (2, 6), (3, 4), (3, 5), (3, 6), (4, 5), (4, 6), (5, 6)\}$.

Total number of cases = $6 \times 5 = 30$

Required probability = $15/30 = 1/2$.

46). Answer E

Train fare between Dehradun and Delhi for one person

$$= (3/4) \times 2 \times 420 = \text{Rs.}630$$

$$\text{Then reqd sum} = 3 \times 420 + 4 \times 630 = \text{Rs.}3780$$

47). Answer C

$$x \times 110/100 \times 110/100 \times (100 + 25/11)/100 = 990$$

$$x = 800$$

48). Answer A

$$\text{Required percentage} = [40 / (100-40)] \times 100\% = (40/60) \times 100\% = 66 \frac{2}{3}\%$$

49). Answer D

Let Nisha salary be 100,

Remaining after expenditure = 25

$$\text{Nisha's savings} = 60\% \text{ of } 25 = (60/100) \times 25 = 15$$

She gave 2100 to her sister, so $25 - 15 = 10$

$$10\% = 2100$$

$$\therefore 100\% = 21000 \text{ (Nisha's salary)}$$

$$\text{Asha's salary} = 75\% \text{ of } 21000 \text{ (since, 25\% less than Nisha's salary)}$$

$$= 15750$$

$$\therefore \text{Asha's expenditure} = 60\% \text{ of } 15750 = 9,450$$

50). Answer A

Quicker Method:

If capacity of can is 'x' then,

$$[(x-8) / x] = 144 / (144 + 25) = 144/169 = (x-8)/x = 12/13$$

$$x = 13 \times 8 = 104 \text{ times}$$



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