200 Quantitative Aptitude Questions for LIC AAO

Directions (1-15):- What will come in place of question mark (?) in the following questions.

Q1. $\sqrt{5776} - \sqrt{1444} + \sqrt{729} = 43 + ?$
(a) 25
(b) 20
(c) 26
(d) 24
(e) 22

Q2. $78 \times 26 \div 6 + 1262 = 1311 + (?)^2$
(a) 17
(b) 22
(c) 15
(d) 13
(e) 19

Q3. $1484 \div 28 + 1462 \div 34 - 12 \times 7 = ?$
(a) 12
(b) 14
(c) 18
(d) 16
(e) 20

Q4. $42.5 \times 15 + 37.5 \times 25 = 1420 + ?$
(a) 145
(b) 165
(c) 155
(d) 170
(e) 185

Q5. $2450 + 3760 - 3830 = 6000 - ?$
(a) 3610
(b) 3620
(c) 3580
(d) 3600
(e) 3520

Q6. $\left(\frac{\frac{4}{5} of 25}{64}\right) \div \left(432 - 20^2 + \frac{3}{7} of\ 21\right) \times (82) = ?\ of\ \frac{1}{64}$
(a) 50
(b) 45
(c) 35
(d) 30
(e) 40

Q7. $55\%\ of\ 900 + 70\%\ of\ 1050 = ?\%\ of\ 3000$
(a) 41
(b) 42
(c) 43
(d) 44
(e) 45

Q8. $73823 - 34156 + 4756 + 6758 - 9849 = 41499 - 160 - ?$
(a) 5
(b) 7
(c) 4
(d) 8
(e) 6

Q9. $\frac{5599}{1331} \times \frac{3773}{2036} \times \frac{88}{49} = ? - 6^2$
(a) 44
(b) 46
(c) 48
(d) 50
(e) 52

Q10. $84 \times \frac{1}{4} \div 21^2 + ? = \frac{7}{147} \times 21 - \frac{20}{21}$
(a) 2
(b) 1
(c) 0
(d) 3
(e) 4

Q11. $\sqrt{\frac{3840}{60} + \frac{1440}{40} - \frac{1330}{70}} = ?$
(a) 10
(b) 9
(c) 8
(d) 7
(e) 11

Q12. $25 \times 18 + \frac{4200}{40} - \frac{525}{105} = 740 - ?$
(a) 200
(b) 220
(c) 190
(d) 170
(e) 150

Q13. $3845 + 4380 + 2640 - 5965 = (?)^2$
(a) 75
(b) 60
(c) 80
(d) 70
(e) 72

Q14. $400 \div 20 \times 35 + 6666 \div 33 + ? = 1100$
(a) 180
(b) 198
(c) 195
(d) 205
(e) 200

Q15. 28× 14.5+1680÷15+445=1000 -?
(a) 27
(b) 37
(c) 47
(d) 50
(e) 40

Directions (16-30): what approximate value will come in place of question (?) mark:

Q16. 129.89% of 1199.82 + 1249.78 ÷ 49.98 × 30.012 = ?
(a) 2210
(b) 2380
(c) 2310
(d) 2530
(e) 2460

Q17. $155.9 \div \sqrt{168.81} + (2.98)^2 \times 39.89 = ?$ % of 599.92
(a) 62
(b) 78
(c) 84
(d) 52
(e) 68

Q18. $\sqrt{80.98 \times 36.01} + 679.81 \div 17.01 = ? + (511.98)^{1/3}$
(a) 86
(b) 78
(c) 94
(d) 52
(e) 66

Q19. 1599.85% of 139.89 + ? % of 1599.83 = 72.01 × 39.81
(a) 20
(b) 32
(c) 60
(d) 50
(e) 40

Q20. $(17.012)^2 + (21.89)^2 + (8.01)^2 + ? = 1749.821 - 820.01 + 2210.01$
(a) 2208
(b) 2256
(c) 2601
(d) 2303
(e) 2373

Q21. 307.89 + 671.93 – 39.87% of ? + 79.89% of 354.93 = $(27.87)^2$
(a) 1200
(b) 1175
(c) 1225
(d) 1250
(e) 1280

Q22. $\frac{177.8 + ?}{7.98} + 24.89 \times 41.87 - 15.98\ \%\ of\ 400 = (31.89)^2$
(a) 96
(b) 126
(c) 156
(d) 196
(e) 84

Q23. $\sqrt{1295.96} + \sqrt{2024.93} + \sqrt{1520.97} - \sqrt{?} = 12.93$ % of 899.98
(a) 5
(b) 7
(c) 13
(d) 16
(e) 9

Q24. $349.89 + \frac{55.98 \times 239.89}{13.86} + \sqrt{?} = (10.98)^3$
(a) 196
(b) 441
(c) 400
(d) 529
(e) 625

Q25. $31.96 \times 34.89 + \sqrt{960.89} + 18.98\ \%\ of\ ? = 39.98\ \%\ of\ 3304.98$
(a) 800
(b) 700
(c) 900
(d) 1000
(e) 950

Q26. 1782.011 ÷ 53.99 + 455.889 – 2346.011 × 1.011 = ? × 2.93
(a) –629
(b) –619
(c) 629
(d) 619
(e) –609

Q27. (574.99 + 7511.11 – 2768.91) ÷ (76.1 × 0.98 + 674.976 – 342.001) = $\sqrt{?}$
(a) 529
(b) 49
(c) 169
(d) 289
(e) 729

Q28. $\left[\left(\sqrt{3843.9 \times 9.09}\right) \div (26.99)^{\frac{1}{3}}\right] \times 23.012 = ?^2 + 336.97$
(a) 33
(b) 23
(c) 27
(d) 37
(e) 43

Q29. $\sqrt{(95.99) \times 12.01 \div 17.9 + 25.899 - 9.011} =$ (64.9 – ?)% of 35.88
(a) 50
(b) 35
(c) 30
(d) 40
(e) 20

Q30. $11.9 \times \sqrt{224.89} + 1212.09 - (1053.11 \div 8.9) = ?$
(a) 1,275
(b) 1,225
(c) 1,175
(d) 1,255
(e) 1,245

Directions (31-45): What approximate value will come in place of question mark (?) in the following questions. (You are not expected to find the exact value)

Q31. 42.022% *of* 350.09 − 28.04% *of* 399.999 =?
(a) 40
(b) 35
(c) 45
(d) 50
(e) 30

Q32. $\sqrt{(123.09 + 465.05) \div 11.99} + ? = 240.02 \div 1.989$
(a) 93
(b) 143
(c) 133
(d) 113
(e) 123

Q33. $(15.99)^2 - 14.04 \times 8.99 + ? = 154.999$
(a) 30
(b) 45
(c) 35
(d) 20
(e) 25

Q34. 62.02% *of* 249.99 − 19.99% *of* 105.05 − ? = 110
(a) 24
(b) 16
(c) 28
(d) 34
(e) 20

Q35. 44.98% *of* 220.09 + 30.03% *of* 160.06 $= ?^2 + 2.99$
(a) 32
(b) 28
(c) 12
(d) 22
(e) 18

Q36. 1229.99 + 2120.09 − 3049.987 =?
(a) 300
(b) 100
(c) 200
(d) 500
(e) 400

Q37. $\sqrt{\sqrt{(99.99 + 104.99 \times 5}} = ? \div 8.989$
(a) 55
(b) 15
(c) 25
(d) 35
(e) 45

Q38. 35.99 × 4.98 − 1199.99 ÷ 7.99 =?
(a) 20
(b) 50
(c) 40
(d) 30
(e) 10

Q39. $?^2 + 60\%$ *of* 239.99 = 55% *of* 320.02 + 3.98
(a) 8
(b) 6
(c) 4
(d) 16
(e) 14

Q40. 524.90 + 125.05 = ? × 9.99
(a) 85
(b) 75
(c) 65
(d) 55
(e) 45

Q41. $\sqrt{144.04} \times 15\%$ *of* 120.09 = ? − 54.99 × 3.03
(a) 401
(b) 431
(c) 341
(d) 471
(e) 381

Q42. 13.03 × 7 + ? = 30.03% *of* 349.99
(a) 14
(b) 18
(c) 8
(d) 20
(e) 6

Q43. 32.01% *of* 600.02 − 19.99% *of* 400.04 + ? = 859.99 ÷ 2
(a) 358
(b) 258
(c) 288
(d) 318
(e) 338

Q44. $\frac{141}{20.09} + \frac{279.89}{39.99} - \sqrt{?} = 10.01$
(a) 36
(b) 16
(c) 4
(d) 64
(e) 100

Q45. $8.98 \times 60.02 - 19.99^2 + 10.01\%\ of\ 130.09 = ?$
(a) 123
(b) 93
(c) 153
(d) 173
(e) 113

Directions (46-60): In each of these questions a number series is given. In each series only one number, if any, is wrong. Find out the wrong number.

Q46. 28, 14, 14, 22, 42, 105, 315
(a) 28
(b) 42
(c) 315
(d) 22
(e) 105

Q47. 5, 7, 13, 25, 47, 75, 117
(a) 5
(b) 7
(c) 75
(d) 117
(e) 47

Q48. 288000, 24000, 3600, 300, 50, 12.5, 6.25
(a) 24000
(b) 50
(c) 12.5
(d) 3600
(e) 6.25

Q49. 120, 125, 136, 149, 166, 185, 208
(a) 120
(b) 166
(c) 149
(d) 185
(e) 208

Q50. 205, 214, 186, 250, 125, 341, −2
(a) 205
(b) 214
(c) 250
(d) 125
(e) -2

Q51. 810, 820, 832, 868, 1012, 1732, 6052
(a) 6052
(b) 810
(c) 868
(d) 832
(e) 1732

Q52. 1024, 350, 832, 508, 704, 604, 640
(a) 1024
(b) 640
(c) 704
(d) 350
(e) 508

Q53. 190, 210, 266, 358, 486, 646, 850
(a) 646
(b) 850
(c) 486
(d) 190
(e) 210

Q54. 15, 50, 160, 370, 709, 1208, 1904
(a) 15
(b) 50
(c) 370
(d) 1208
(e) 15

Q55. 120, 170, 251, 367, 522, 720, 990
(a) 120
(b) 990
(c) 522
(d) 367
(e) 251

Q56. 55, 120, 210, 338, 517, 760, 1090
(a) 120
(b) 1090
(c) 760
(d) 55
(e) 338

Q57. 110, 140, 240, 261, 365, 380, 492
(a) 240
(b) 380
(c) 492
(d) 140
(e) 110

Q58. 105, 106, 123, 154, 197, 255, 327
(a) 197
(b) 105
(c) 154
(d) 255
(e) 123

Q59. 1, 329, 638, 911, 1130, 1277, 1334
(a) 1
(b) 1334
(c) 911
(d) 1277
(e) 638

Q60. 2100, 2136, 1990, 2316, 1740, 2640, 1344
(a) 2100
(b) 1990
(c) 2316
(d) 1740
(e) 2640

Direction (61-75): Given below in each question two quadratic equations are given. Please solve each quantity and compare both of them and answer accordingly from the following options.
(a) x>y
(b) y> x
(c) x ≥y
(d) x ≤y
(e) x =y or No relation can't be established.

Q61. I. $2x^2 + x - 6 = 0$
II. $y^2 + 6y + 9 = 0$

Q62. I. $x^2 - 4x + 4 = 0$
II. $y^2 - 10y + 16 = 0$

Q63. I. $2x^2 + 7x + 6 = 0$
II. $3y^2 + 11y + 10 = 0$

Q64. I. $x^2 - 2x - 24 = 0$
II. $y^2 - 12y + 36 = 0$

Q65. I. $4x^2 + 11x + 6 = 0$
II. $y^2 + 10y + 25 = 0$

Q66. I. $4x^2 - 20x + 25 = 0$
II. $5y^2 - 6y - 8 = 0$

Q67. I. $x^2 - 2x - 15 = 0$
II. $y^2 - 15y + 56 = 0$

Q68. I. $10x^2 + 19x + 7 = 0$
II. $5y^2 + 16y + 12 = 0$

Q69. I. $x^2 - 20x + 75 = 0$
II. $y^2 + 19y + 84 = 0$

Q70. I. $x^2 - 9x - 22 = 0$
II. $y^2 - 17y + 66 = 0$

Q71. I. $4x^2 + 19x + 15 = 0$
II. $8y^2 + 10y + 3 = 0$

Q72. I. $x^2 - 18x + 56 = 0$
II. $y^2 + 4y - 32 = 0$

Q73. I. $x^2 + 14x - 72 = 0$
II. $y^2 - 13 + 36 = 0$

Q74. I. $x^2 - 9^2 = 12^2$
II. $y^3 = 3375$

Q75. I. $\frac{x^{\frac{5}{2}}}{28} = \frac{x^{\frac{3}{2}}}{7}$
II. $11y + (7 \times 6) = 97$

Directions (76-90): In each of the following questions, two equations (I) and (II) are given. Solve the equations and mark the correct option:
(a) if x>y
(b) if x≥y
(c) if x<y
(d) if x ≤y
(e) if x = y or no relation can be established between x and y.

Q76.
I. $x^2 - 22x + 72 = 0$
II. $y^2 + 11y + 30 = 0$

Q77.
I. $x^2 - 23x + 120 = 0$
II. $y^2 - 17y + 70 = 0$

Q78.
I. $x^2 - 15x + 54 = 0$
II. $y^2 + 10y - 96 = 0$

Q79.
I. $x^3+440=2168$
II. $y^2-23=121$

Q80.
I. $x^2 + 4x - 12 = 0$
II. $y^2 - 9y + 20 = 0$

Q81.
I. $x^2 - 25x + 100 = 0$
II. $y^2 - 27y + 110 = 0$

Q82.
I. $x^2 = 289$
II. $y = \sqrt{289}$

Q83.
I. $x^2 + 12x + 32 = 0$
II $y^2 + 7y + 12 = 0$

Q84.
I. $3x^2 + 16x + 20 = 0$
II. $y^2 + 14y + 48 = 0$

Q85.
I. $x^2 + x - 72 = 0$
II. $y^2 + 13y + 42 = 0$

Q86.
I. $x^2 + 5x + 6 = 0$
II. $y^2 - 9y + 14 = 0$

Q87.
I. $x^2 - 14x + 45 = 0$
II. $y^2 + 2y - 35 = 0$

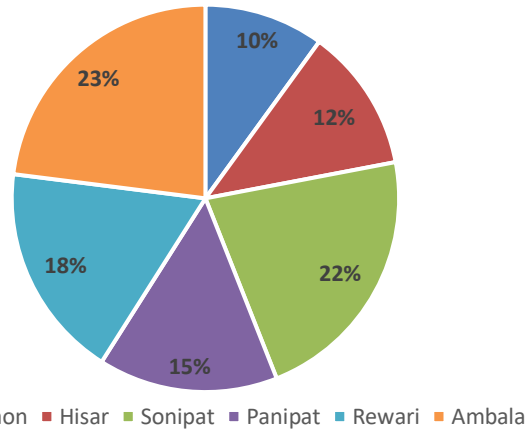
Q88.
I. $x^2 + 11x + 18 = 0$
II. $y^2 + 6y + 8 = 0$

Q89.
I. $x^2 + 5x = -6$
II. $y^2 - 15y = 16$

Q90.
I. $2x + 3y = 3$
II. $3x + y = 8$

Directions (91-95): Pie chart given below shows distribution of passenger travelling from Haryana roadways to different district. Read the data carefully and answer the questions.

Total no. of passenger travelling from Haryana roadways = 22500



Q91. No. of passenger who are travelling to Gurgaon are approximately how much percent less than no. of passenger travelling to Sonipat and Ambala together?
(a) 75%
(b) 78%
(c) 50%
(d) 65%
(e) 90%

Q92. What is the average no. of passengers who are travelling to Hisar, Panipat and Rewari?
(a) 3025
(b) 2075
(c) 3375
(d) 3425
(e) 3075

Q93. Passenger travelling to Hisar district are how many less than passenger travelling to Ambala?
(a) 2525
(b) 2575
(c) 2425
(d) 2475
(e) None of these.

Q94. If ratio of men to women who are travelling to Ambala and Gurgaon are 18:5 and 7:8 respectively, find ratio between men travelling to Gurgaon and women travelling to Ambala?
(a) 5:7
(b) 7:18
(c) 7:5
(d) 14:15
(e) 15:8

Q95. If fair of a ticket for Rewari is Rs.75 and fair for Panipat is $33\frac{1}{3}$% more than that of Rewari, find difference between total revenue generated from both district (in Rs.)?
(a) 33750
(b) 22025
(c) 34250
(d) 35750
(e) 25075

Directions (96-100): Paragraph given below gives information of literate and illiterate population out of total population of three cities i.e. A, B and C. Read the paragraph carefully and answer the following questions.
Total population of city A and B are 22000 and 16000 respectively. Total literate population of city B is 6000 which is 6.25% of total population of city C. Ratio of literate to illiterate population in city A and C is 5:6 and 2:1 respectively. 40% of literate population in each city is graduate.

Q96. Literate population from city B are what percent of illiterate population of city A?
(a) 100%
(b) 75%
(c) 50%
(d) 40%
(e) 60%

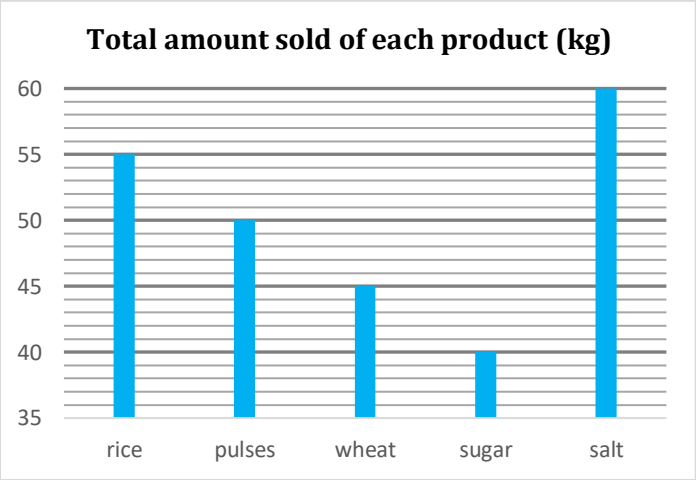
Q97. What is the ratio between graduate population of city C and total population of city B?
(a) 5:8
(b) 3:5
(c) 5:3
(d) 8:5
(e) 1:3

Q98. What is the difference between graduate population of city B and illiterate population of city C?
(a) 29600
(b) 28400
(c) 28600
(d) 29400
(e) None of these.

Q99. Population which is literate but ungraduated from city A are what percent graduate population of city B?
(a) 500%
(b) 250%
(c) 300%
(d) 120%
(e) 375%

Q100. If ratio of male to female in graduate population from city C is 9:7, find difference between graduate male from city C to literate but ungraduated from city B?
(a) 7200
(b) 14400
(c) 10800
(d) 12000
(e) 11800

Directions (101-110): Bar graph given below shows quantity of five different products (i.e. rice, pulse, wheat, sugar and salt) sold (in kg) by a shopkeeper and table shows total revenue (in Rs.) generated by selling these individual products.



Name of product	Total revenue (in Rs.)
Rice	2200
Pulse	3750
Wheat	900
Sugar	1200
Salt	600

Q101. Cost price of per kg rice is how much more or less than per kg selling price of sugar when rice is sold at 60% profit?
(a) Rs. 4 more
(b) Rs. 5 less
(c) None of these.
(d) Rs. 4 less
(e) Rs. 5 more

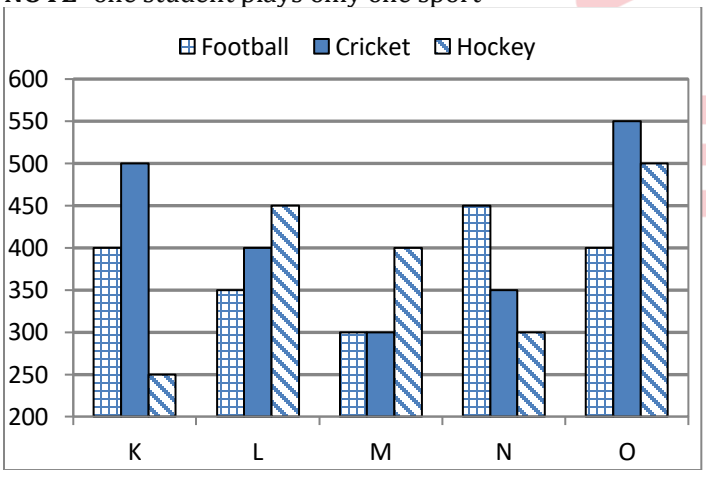
Q102. If 3 kg of wheat and 2 kg of salt is mixed, then what will be the selling price per kg of such mixture?
(a) Rs.15
(b) Rs. 17
(c) Rs. 14
(d) Rs. 12
(e) Rs. 16

Q103. Total revenue generated from wheat is what percent of difference between total revenue generated from rice and salt?
(a) 40.25%
(b) 56.25%
(c) 64.25%
(d) 45.50%
(e) 25.75%

Q104. If cost price of per kg pulse is Rs. 60, find profit earned on selling 40 kg of pulse (in Rs.)?
(a) 450
(b) 600
(c) 800
(d) 750
(e) 300

Q105. What is the average quantity of rice, pulse and wheat sold by shopkeeper?
(a) 45 kg
(b) 55 kg
(c) 60 kg
(d) 40 kg
(e) 50 kg

Directions (106-110): Study the following bar graph and answer the questions that follow.
Given below is the bar graph which shows the number of students playing three different games in five colleges in year 2014.
NOTE- one student plays only one sport



Q106. If $11\frac{1}{9}\%$ of students playing Hockey of college L are females then, number of males playing Hockey from same college is what percent of average number of students playing Hockey from college M & O ?
(a) $88\frac{8}{9}\%$
(b) $63\frac{1}{3}\%$
(c) $68\frac{8}{9}\%$
(d) $72\frac{2}{7}\%$
(e) $82\frac{2}{3}\%$

Q107. If $14\frac{2}{7}\%$ of student playing Cricket of college N left playing cricket and started playing Football in same college then find the ratio of number of student playing football of college N and M together to the number of student playing Cricket of college K and N together?
(a) 3 : 2
(b) 1 : 2
(c) 1 : 1
(d) 1 : 3
(e) 2 : 1

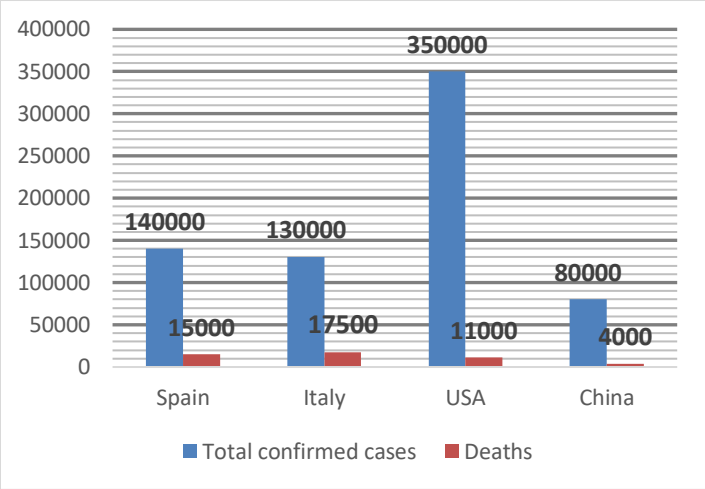
Q108. Average no. of students playing Hockey of college K, L and O is how much more than average number of students playing football of college K, L & M ?
(a) 120
(b) 50
(c) 80
(d) 40
(e) 100

Q109. Total number of student playing Cricket of college L and M together are what percent more/less than total number of student playing Hockey of college K and M together?
(a) $32\frac{1}{3}\%$
(b) $17\frac{9}{13}\%$
(c) $12\frac{3}{13}\%$
(d) $23\frac{2}{3}\%$
(e) $7\frac{9}{13}\%$

Q110. If total number of students in college K in year 2015 is increased by 20% percent with respect to year 2014 and the ratio of student playing Football, Cricket and Hockey becomes 5 : 2 : 3 respectively then find the average number of students playing football in same college K in year 2014 and 2015 ?
(a) 640
(b) 525
(c) 625
(d) 545
(e) 454

Direction (111-115): Given bar graph shows total number of confirmed cases of COVID-19 and number of deaths in four different countries. Study the bar graph carefully and answer the questions given below.

$$\text{Mortality rate} = \frac{\textit{Number of death}}{\textit{Number of total confirmed cases}} \times 100$$



Q111. For which country mortality rate is lowest among the given four countries.
(a) Italy
(b) USA
(c) Spain
(d) China
(e) USA and China

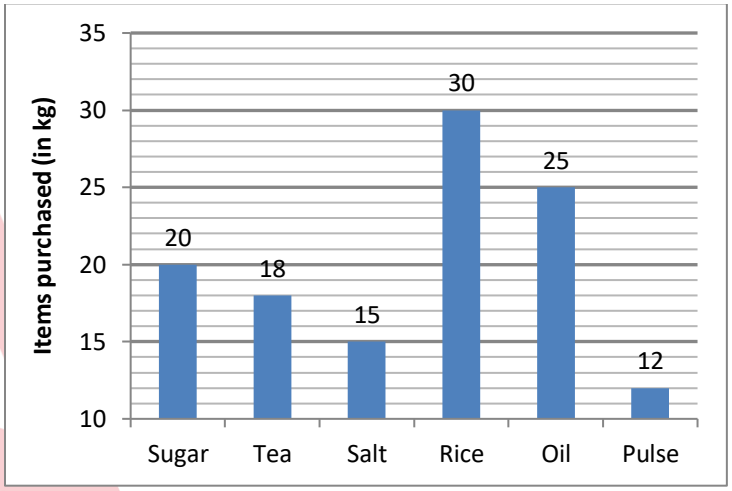
Q112. Total confirmed cases in USA is what percent more than total deaths in Italy.
(a) 1200%
(b) 1350%
(c) 2100%
(d) 1900%
(e) 1500%

Q113. Find out the ratio between mortality rate of Spain to that of China?
(a) 19: 11
(b) 43:14
(c) 15:7
(d) 14:9
(e) 13: 5

Q114. Total death in all four countries together is what percent of total confirmed cases in China?
(a) 59.375%
(b) 62%
(c) 55%
(d) 66.66%
(e) 75%

Q115. If number of confirmed cases in China is increased by 25% and mortality rate remains same, what will be the new number of total deaths in China.
(a) 4400
(b) 4500
(c) 4600
(d) 5200
(e) 5000

Direction (116 – 120): Given below the bar graph shows the quantity of six different items (in kg) purchased by a person during the lockdown period. Read the data carefully and answer the questions.



Q116. If the sum of the price of one kg sugar and one kg salt is Rs.84 and the ratio of price of one kg of sugar and one kg of salt is 11: 10. Then, find the difference between the total price of Sugar and salt purchased by man?
(a) Rs. 220
(b) Rs. 240
(c) Rs. 260
(d) Rs. 300
(e) Rs. 280

Q117. If the total price of tea is Rs. 900 and that of rice is Rs. 1500, then find the price of one kg tea is what percent more than that of rice?
(a) 0%
(b) 20%
(c) 5%
(d) 10%
(e) 15%

Q118. If the price of one kg of pulse and one kg of oil is Rs. 63 and Rs. 42 respectively, then find the ratio of the total price of the pulse to the total price of oil?
(a) 13:25
(b) 1:2
(c) 3:5
(d) 18:25
(e) 12:13

Q119. The total quantity of sugar and salt purchased together by man is what percent of the total quantity of rice and pulse together purchased by man?
(a) $87\frac{1}{3}\%$
(b) $83\frac{1}{3}\%$
(c) 74%
(d) 92%
(e) $64\frac{1}{3}\%$

Q120. If the price of one kg salt, one kg rice, and one kg oil is Rs. 56, Rs. 32 and Rs. 40 respectively, then find out the total price of oil, salt, and rice purchased by man?
(a) Rs. 2000
(b) Rs. 2800
(c) Rs. 2200
(d) Rs. 1800
(e) Rs. 2600

Q121. Train A crosses a 230m long platform in 29 seconds and train B crosses a 150m long platform in 24 seconds. Train B which is 450m long crosses train A in 160 seconds, while running in the same direction. Find how much time will the train A take to cross a 50m long bridge?
(a) 16 seconds
(b) 22 seconds
(c) 20 seconds
(d) 17 seconds
(e) 25 seconds

Q122. A 950 metres long train-A crosses another train-B running in same direction in 16 seconds. If the ratio of speed of these trains is in the ratio 17:13 respectively, find out the length of train B?
(a) 1000 meter
(b) 1900 meter
(c) 1600 meter
(d) 1100 meter
(e) Can't be determine

Q123. A train crosses a tunnel which is half of its length with a speed of 144 km/hr. in ½ min, then find the time in which it will cross another train which is double of its length and standing on platform in opposite direction with 60% of its initial speed ?
(a) 120 sec.
(b) 90 sec.
(c) 150 sec.
(d) 100 sec.
(e) 180 sec.

Q124. Deepak takes 24 minutes more to cover a certain distance by decreasing his speed by 25%. What is the time taken by him to cover the distance with his original speed?
(a) 70 minutes
(b) 72 minutes
(c) 75 minutes
(d) 90 minutes
(e) 84 minutes

Q125. The speed of boat in downstream is 'X-4' kmph and ratio of time taken by a boat to cover a certain distance in upstream to downstream is 2 : 1. If boat takes 5 hours to Cover 40 km in Upstream, then find the value of X?

(a) 16
(b) 20
(c) 22
(d) 24
(e) 18

Q126. Distance between two cities P and Q is 900 km. Car A and Car B can cover the distance between P and Q in 'X' hours and (X + 4) hours respectively. If Car B and Car A start from city P at 6.00 am and 8.00 am respectively and both Cars meet at 10.30 am, then find the distance between P and the point where both the cars meet?
(a) 425 km
(b) 475 km
(c) 450 km
(d) 500 km
(e) 400 km

Q127. Downstream speed of a boat is $33\frac{1}{3}\%$ more than its upstream speed and the speed of the boat in still water is 15 km/h more than the speed of the stream. Find the total time taken by boat to travel 120 km in upstream?
(a) 7 hr
(b) 8 hr
(c) 9 hr
(d) 5 hr
(e) 10 hr

Q128. Amit goes to office from his home by bike at the speed of 30 kmph and he comes back to his home from office by bike at the speed of X kmph. If average speed for whole journey is 33 kmph, then find the value of 'X' (nearest to two decimal places)?
(a) 35.56 km/hr
(b) 36.00 km/hr
(c) 36.67 km/hr
(d) 32.50 km/hr
(e) 34.50 km/hr

Q129. A train 'X' starts from station P at 8 am and reaches station Q at 4 pm. Another train 'Y' started from Q at the same time at which 'X' started and reaches 'P' at 3 pm. then find the time at which both the trains crossed each other.
(a) 11 : 44 am
(b) 11 : 48 am
(c) 11 : 36 am
(d) 12 : 44 pm
(e) 11 : 50 am

Q130. A car covered a certain distance at a certain speed in a fixed time. If car had moved 9 kmph slower, it would have taken 2 hours more and if it had moved 5 kmph faster, it would have taken 48 min less. Find the distance covered by car?
(a) 300 km
(b) 360 km
(c) 320 km
(d) 400 km
(e) 450 km

Q131. Downstream speed of a boat is $57\frac{1}{7}\%$ more than the upstream speed of a boat. If the speed of the stream is 8 km/hr., then find the total time taken by the boat to cover 176 km in downstream and 70 km in upstream.
(a) 7 hours
(b) 6.5 hours
(c) 7.5 hours
(d) 6 hours
(e) 8 hours

Q132. Speed of a boat in still water is 8 km/h. It takes 5 hours to go upstream and 3 hours downstream distance between two points. What is the speed of stream?
(a) 4 km/h
(b) 2 km/h
(c) 3 km/h
(d) 1 km/h
(e) 2.5 km/h

Q133. A man covers half of total distance with 12 km/h and another half distance with 24km/h. Find his average speed.
(a) 12 km/h
(b) 16 km/h
(c) 10 km/h
(d) 18 km/h
(e) 6 km/h

Q134. A man can row 12 kmph in still water and it takes him 90 minutes to reach a place & return. If the speed of current is 4 kmph then how far is the place?
(a) 8 km
(b) 6 km
(c) 10 km
(d) 12 km
(e) 16 km

Q135. A man travels some journey on car with speed 60 kmph and some on cycle with speed 4 kmph. In return journey he come in train with speed 20 kmph and take equal time in both side journey. Find the ratio of the distance travel by car, cycle and train.
(a) 8 : 2 : 11
(b) 3 : 2 : 5
(c) 2 : 1 : 3
(d) 6 : 1 : 7
(e) None of these

Q136. A spherical ball of radius 16 cm is melted and casted into two cones of equal size and shape. If the base radius of the cone is 50% of the height of the cone. Find the height of each cone?
(a) 36 cm
(b) 18 cm
(c) 32 cm
(d) 20 cm
(e) 16 cm

137. How many three letters words starting with S (with or without meaning) can be formed out of the letters of the word, "STRANGE", if repetition of letters is not allowed?
(a) 10
(b) 15
(c) 12
(d) 30
(e) 18

Q138. If two dice are rolled simultaneously, find the probability of obtaining the sum (of numbers on these two dices) which is divisible by 2 or 3 but not by both?
(a) $\frac{1}{4}$
(b) $\frac{1}{2}$
(c) $\frac{1}{5}$
(d) $\frac{1}{6}$
(e) $\frac{1}{3}$

Q139. The area of a rectangular field having length 128m and breadth 16m is equal to the area of an isosceles right-angle triangle. If the radius of a sphere is $12\frac{1}{2}\%$ of the hypotenuse of the isosceles right-angle triangle, then find out the total surface area of sphere?
(a) $512\pi\ m^2$
(b) $343\pi\ m^2$
(c) $580\pi\ m^2$
(d) $494\pi\ m^2$
(e) $500\pi\ m^2$

Q140. Gurdeep Chhabra joined 'Adda 247' with the work experience of 26 years due to which average work experience of all employees of 'Adda 247' was increased by one year. If initial average work experience of all employees of 'Adda 247' was five years, then find the new number of employees in 'Adda 247'?
(a) 23
(b) 19
(c) 25
(d) 21
(e) 27

Q141. If two dices are rolled together, then find the probability of getting a number of one dice greater than the number on other dice?
(a) $\frac{3}{4}$
(b) $\frac{2}{3}$
(c) $\frac{1}{6}$
(d) $\frac{5}{6}$
(e) $\frac{1}{2}$

Q142. The radius of a cylinder & a sphere is same, and ratio of height and radius of cylinder is 2 : 1.If the volume of sphere is $288\ \pi\ cm^3$ then find the volume of cylinder? (in cm^3)
(a) $438\ \pi$
(b) $426\ \pi$
(c) $420\ \pi$
(d) $432\ \pi$
(e) $444\ \pi$

Q143. How many cubes of 7.5 cm edge can be cut out from a cube of 45 cm edge?
(a) 108
(b) 72
(c) 216
(d) 230
(e) 256

Q144. How many Words can be formed from the letters of the word 'FLAGSHIP' so that the vowels always come together?
(a) 5040
(b) 10080
(c) 720
(d) 360
(e) 1440

Q145. One card is picked randomly from a pack of 52 playing cards. What is the probability that it would either be black queen or red king?
(a) $\frac{1}{13}$
(b) $\frac{5}{13}$
(c) $\frac{6}{13}$
(d) $\frac{7}{13}$
(e) $\frac{8}{13}$

Q146. The ratio of height of a cylinder to its base radius is 2:1 respectively. If radius of a hemisphere is equal to the radius of the cylinder, then find the total surface area of cylinder is what percent more than total surface area of a hemisphere?
(a) 40%
(b) 30%
(c) can't be determined
(d) $33\frac{1}{3}\%$
(e) 50%

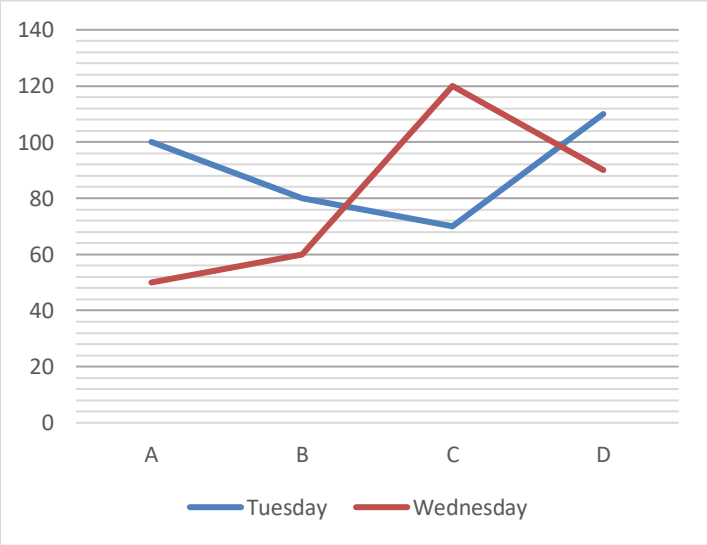
Q147. A bag contains 4 red, 3 orange and 2 green color balls. Find the probability of selecting two same color balls from the bag?
(a) $\frac{1}{2}$
(b) $\frac{7}{18}$
(c) $\frac{4}{5}$
(d) $\frac{5}{13}$
(e) $\frac{5}{18}$

Q148. Find the probability of eight letters word that can be formed from the letters of the word 'BLASTING' so that vowels always come together.
(a) $\frac{1}{4}$
(b) $\frac{2}{5}$
(c) $\frac{1}{3}$
(d) $\frac{10}{21}$
(e) $\frac{5}{14}$

Q149. The total surface area of a cylindrical vessel is 1232 cm^2 and the height of vessel is 2 times more than the radius of vessel. Find the volume of cylindrical vessel?
(a) 4312 cm^3
(b) 3201 cm^3
(c) 3234 cm^3
(d) 3256 cm^3
(e) 3333 cm^3

Q150. There are 5 red balls, 6 black balls and some green colored balls in a box. If the probability of choosing a black ball from the box is $\frac{1}{3}$, then find the number of green-colored ball in the box?
(a) 5
(b) 4
(c) 6
(d) 8
(e) 7

Directions (151-155): Line graph below shows the number of complaints received by four different network operators (A, B, C & D) on two different days Tuesday & Wednesday. Study the line graph carefully and answer the following questions.



Q151. Find the difference between the total number of complaints received on both days by all network operators?
(a) 40
(b) 50
(c) 60
(d) 70
(e) 80

Q152. Total number of complaints received by C & D together on Tuesday are what percent more/less than the number of complaints received by A & B together on Wednesday?
(a) 62.50%
(b) 63.63%
(c) 66.66%
(d) 33.33%
(e)11.11%

Q153. Find the ratio of number of complaints received by B on both days to number of complaints received by A & D together on Wednesday?
(a) 1: 2
(b) 2 : 1
(c) 1 :1
(d) 5 : 4
(e) 4 : 5

Q154. Find the total number of complaints received by C on Tuesday and Wednesday are approximately what percent of total number of complaints received on Tuesday by all network operators together?
(a) 36%
(b) 60%
(c) 53%
(d) 48%
(e) 67%

Q155. Find the ratio of complaints received by A,B & D together on Tuesday to total complaints received on Wednesday by all network operators together?
(a) 11: 17
(b) 21 : 31
(c) 18 : 19
(d) 29 : 32
(e) 51 : 43

Direction (156 – 160): In each of these questions a number series is given. In each series only one number is wrong. Find out the wrong number.

Q156. 8, 4, 4, 10, 12, 30, 90
(a) 90
(b) 8
(c) 10
(d) 12
(e) 30

Q157. 11, 16, 25, 41, 66, 102, 151
(a) 41
(b) 66
(c) 11
(d) 151
(e) 25

Q158. 21, 25, 20, 28, 19, 27, 18
(a) 18
(b) 27
(c) 19
(d) 25
(e) 20

Q159. 20, 28, 40, 56, 76, 104, 128
(a) 104
(b) 128
(c) 56
(d) 28
(e) 40

Q160. 1, 2, 6, 20, 88, 445, 2676
(a) 2
(b) 6
(c) 88
(d) 2676
(e) 20

Direction (161 – 165): What will come in the place of question (?) mark in following the question:

Q161. $36 \div 4 \times 7 + 4 \times 4.5 = ?^2$
(a) 9
(b) 7
(c) 19
(d) 17
(e) 3

Q162. $\sqrt{1849} - \sqrt{256} = \sqrt{?} - \sqrt{144}$
(a) 1681
(b) 1600
(c) 1296
(d) 1446
(e) 1521

Q163. $250\%\ of\ 30 - 175\%\ of\ 36 + 5^2 = ?$
(a) 27
(b) 18
(c) 37
(d) 21
(e) 31

Q164. $3167 - 2881 - 11^2 = ? - \sqrt{1681}$
(a) 316
(b) 416
(c) 286
(d) 326
(e) 206

Q165. $62.5\%\ of\ ? - (5)^2 = 15^2$
(a) 200
(b) 100
(c) 500
(d) 400
(e) 300

Direction (166 – 170): What approximate value should come in the place of question (?) mark in the following questions.

Q166. 24.01% of 449.98 + $?^2$ = $(16.01)^2 - \sqrt[3]{63.93}$
(a) 8
(b) 12
(c) 10
(d) 9
(e) 14

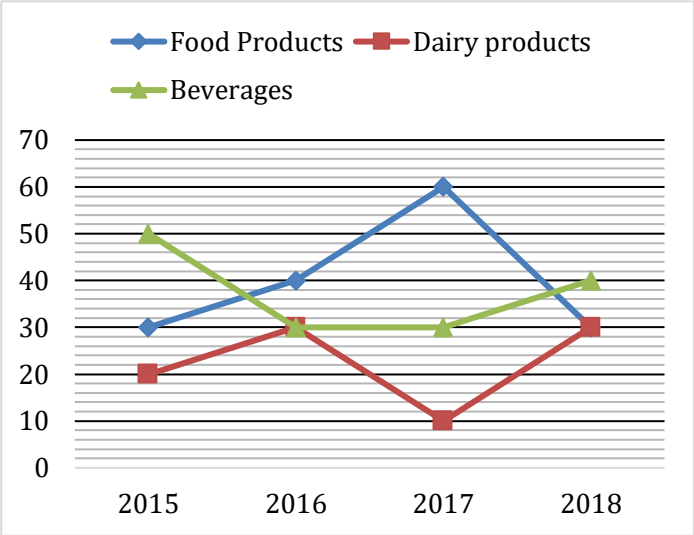
Q167. ? × (44.01 % of 750.01 + 110.01) = 87.99% of 2499.98
(a) 2
(b) 4
(c) 3
(d) 5
(e) 6

Q168. $4^?$ + 79.98% of 980.03 = 1039.99
(a) 4
(b) 2
(c) 3
(d) 5
(e) None of these

Q169. $\frac{1512.01}{?}$ + 49.99% of 488 = 70.03% of 399.99
(a) 64
(b) 32
(c) 48
(d) 36
(e) 42

Q170. ?% of 639.98 + 40.03% of 279.99 = $(19.99)^2$
(a) 25
(b) 50
(c) 35
(d) 45
(e) 40

Direction (171-175): Read the given information carefully and answer the following questions.
Line graph shows production of three products in terms of percentage (out of total production in the year) in four different years.



1.Company produces three different products i.e. food, dairy and beverages.
2.Total production of the company was same in all years.

Q171. In 2016, quantity of food products and dairy products produced is what percent more or less than that of beverages produced in year 2015 and 2016 together?
(a) $13\frac{1}{3}\%$
(b) 15%
(c) $16\frac{2}{3}\%$
(d) 12.5%
(e) 10%

Q172. If total number of products produced in year 2018 was 1,50,000. Find the difference between number of food products produced in 2017 and number of dairy products produced in 2015 and 2016 together?
(a) 12000
(b) 18000
(c) 12500
(d) 10000
(e) 15000

Q173. Find the ratio of average of number of food products produced in 2015, 2017 and 2018 to total number of beverages produced in 2016 and 2017 together.
(a) 3: 2
(b) 2: 3
(c) 3: 5
(d) 5: 3
(e) 3: 4

Q174. The difference between number of food products and dairy products produced in 2015 and 2018 together is 12000. Find the average of dairy products and beverages produced by company in 2017?
(a) 30000
(b) 22500
(c) 20000
(d) 24000
(e) 25000

Q175. Find the total production in 2019 if there was an increase of 20% in production in 2019 as compared to previous year given that number of dairy products in 2015 was 18000?
(a) 1,20,000
(b) 1,08,000
(c) 1,18,000
(d) 1,12,000
(e) None of these

Directions (176-180): What comes at the place of question marks:
Q176. 588, 562, 614, 536, 640, ?
(a) 552
(b) 510
(c) 542
(d) 532
(e) 572

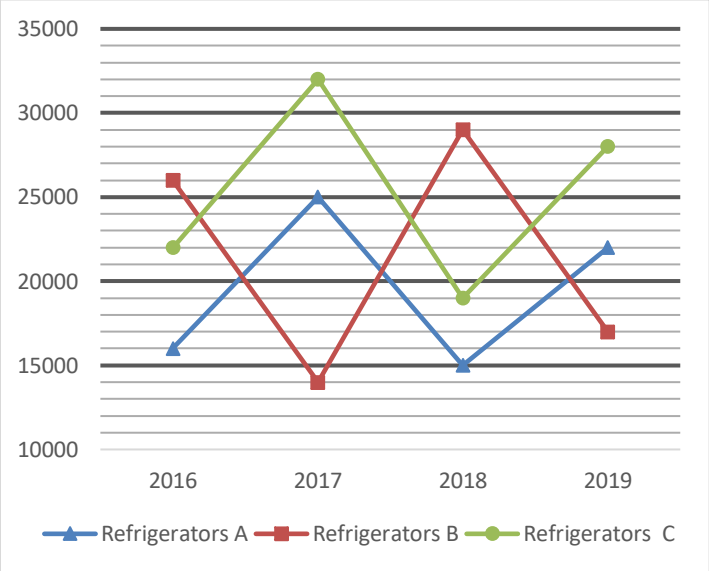
Q177. 27, 52, 102, 202, 402, ?
(a) 912
(b) 892
(c) 922
(d) 932
(e) 802

Q178. 17, 41, 91, 171, 293, ?
(a) 461
(b) 481
(c) 471
(d) 491
(e) 451

Q179. 35, 7, 42, 8.4, 50.4, ?
(a) 9.62
(b) 8.76
(c) 12.56
(d) 10.08
(e) 11.02

Q180. 24, 60, 90, 225, 337.5, ?
(a) 812.75
(b) 843.75
(c) 792.75
(d) 875.75
(e) 896.75

Direction (181-185): Line graph given below shows the selling prices (in rupees) of three types of Refrigerators (A, B & C) in four different years i.e. 2016, 2017, 2018, and 2019 for a shopkeeper



Q181. If a discount of 24% is given on refrigerator C sold in 2018 and ratio of MP to CP of C in 2018 is 5 : 3. then find the difference between the discount allowed and profit earned on C in 2018. (in rupees)
(a) 5000
(b) 4000
(c) 2000
(d) 6000
(e) 3000

Q182. Find out average selling price of refrigerator A in all the given years. (in rupees)
(a) 16500
(b) 22500
(c) 18500
(d) 19500
(e) 25500

Q183. Find out the ratio between selling price of refrigerator C in 2018 and the selling price of refrigerator A in 2017?
(a) 20:21
(b) 18:25
(c) 19:25
(d) 23:27
(e) 16:25

Q184. In which year sum of selling price of all 3 type of the refrigerator was the lowest?
(a) 2019
(b) 2016
(c) 2017
(d) 2018
(e) 2016 and 2018

Q185. selling price of refrigerator A in year 2018 is approx. what percent of selling price of refrigerator B in 2019?
(a) 78%
(b) 88%
(c) 82%
(d) 72%
(e) 93%

Direction (186 – 190): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give the answers accordingly.
(a) if $x>y$
(b) if $x\geq y$
(c) if $x<y$
(d) if $x\leq y$
(e) if $x = y$ or no relation can be established between x and y.

Q186. I. $x^2 - 14x + 48 = 0$
II. $y^2 - 17y + 72 = 0$

Q187. I. $x^2 + 13x + 42 = 0$
II . $y^2 + 15y + 56 = 0$

Q188. I . $x^2 + 8x + 12 = 0$
II . $6y^2 + 13y + 6 = 0$

Q189. $2x^2 + 9x + 9 = 0$
$y^2 + 28y + 192 = 0$

Q190. I . $x^2 - 9x + 20 = 0$
II. $y^2 - 6y + 9 = 0$

Directions (191-195): What should come in place of the question mark (?) in the following number series.

Q191. 90, 55, 75, 142.5, ? , 862.5
(a) 285
(b) 325
(c) 470
(d) 855
(e) 270

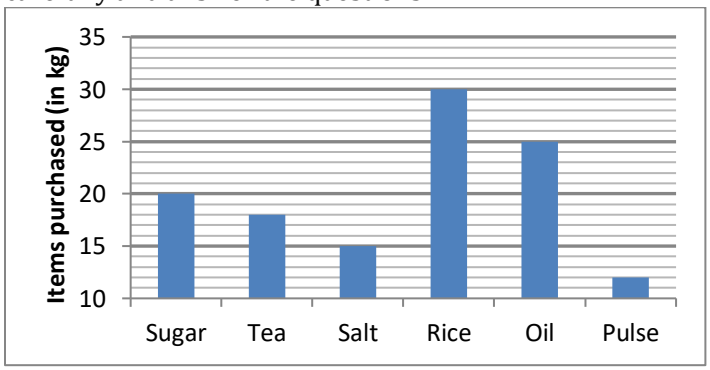
Q192. 5, 12, 39, 160, ? , 4836
(a) 850
(b) 750
(c) 800
(d) 805
(e) 820

Q193. 26, 36, 54, 80, 114, ?
(a) 146
(b) 133
(c) 201
(d) 134
(e) 156

Q194. 17, 25, 49, 97, 177, ?
(a) 297
(b) 247
(c) 358
(d) 292
(e) 279

Q195. 21, 28, 42, 64, 95, ?
(a) 125
(b) 158
(c) 142
(d) 136
(e) 164

Direction (196 – 200): Given below the bar graph shows the quantity of six different items (in kg) purchased by a person during the lockdown period. Read the data carefully and answer the questions.



Q196. If the sum of the price of one kg sugar and one kg salt together is Rs.84 and the ratio of price of one kg of sugar and one kg of salt is 11: 10. Then, find the difference between the total price of Sugar and salt purchased by man?
(a) Rs. 220
(b) Rs. 240
(c) Rs. 260
(d) Rs. 300
(e) Rs. 280

Q197. If the total price of tea is Rs. 900 and that of rice is Rs. 1500, then find the price of one kg tea is what percent more than that of rice?
(a) 0%
(b) 20%
(c) 5%
(d) 10%
(e) 15%

Q198. If the price of one kg of pulse and one kg of oil is Rs. 63 and Rs. 42 respectively, then find the ratio of the total price of the pulse to the total price of oil?
(a) 13:25
(b) 1:2
(c) 3:5
(d) 18:25
(e) 12:13

Q199. The total quantity of sugar and salt purchased together by man is what percent of the total quantity of rice and pulse together purchased by man?
(a) $87\frac{1}{3}\%$
(b) $83\frac{1}{3}\%$
(c) 74%
(d) 92%
(e) $64\frac{1}{3}\%$

Q200. If the price of one kg salt, one kg rice, and one kg oil is Rs. 56, Rs. 32 and Rs. 40 respectively, then find out the total price of oil, salt, and rice purchased by man?
(a) Rs. 2000
(b) Rs. 2800
(c) Rs. 2200
(d) Rs. 1800
(e) Rs. 2600

Solutions

S1. Ans.(e)
Sol.
$\sqrt{5776} - \sqrt{1444} + \sqrt{729} = 43 + ?$
$76 - 38 + 27 = 43 + ?$
$?= 65 - 43 = 22$

S2. Ans.(a)
Sol. $78 \times 26 \div 6 + 1262 = 1311 + (?)^2$
$2028 \div 6 + 1262 = 1311 + (?)^2$
$338 + 1262 = 1311 + (?)^2$
$(?)^2 = 1600 - 1311 = 289$
$? = \sqrt{289} = 17$

S3. Ans.(a)
Sol.
$1484 \div 28 + 1462 \div 34 - 12 \times 7 = ?$
$?= 53 + 43 - 84 = 12$

S4. Ans.(c)
Sol.
$42.5 \times 15 + 37.5 \times 25 = 1420 + ?$
$637.5 + 937.5 = 1420 + ?$
$?= 1575 - 1420 = 155$

S5. Ans.(b)
Sol.
$2450 + 3760 - 3830 = 6000 - ?$
$2380 = 6000 - ?$
$?= 6000 - 2380 = 3620$

S6. Ans.(e)
Sol.
$\left(\frac{\frac{4}{5} of 25}{64}\right) \div \left(432 - 20^2 + \frac{3}{7} of\ 21\right) \times (82) = ? of \frac{1}{64}$
$\left(\frac{5}{16}\right) \div (432 - 400 + 9) \times (82) = ? \times \frac{1}{64}$
$? = \frac{5}{16} \times \frac{1}{41} \times 82 \times 64 = 40$

S7. Ans.(a)
Sol. $55\%\ of\ 900 + 70\%\ of\ 1050 = ?\%\ of\ 3000$
$\frac{55}{100} \times 900 + \frac{70}{100} \times 1050 = \frac{?}{100} \times 3000$
$495 + 735 = 30 \times ?$
$30 \times ? = 1230$
$? = 41$

S8. Ans.(b)
Sol. $73823 - 34156 + 4756 + 6758 - 9849 = 41499 - 160 - ?$
$41332 = 41339 - ?$
$? = 7$

S9. Ans.(d)
Sol. $\frac{5599}{1331} \times \frac{3773}{2036} \times \frac{88}{49} = ? - 6^2$
$14 = ? - 36$
$? = 50$

S10. Ans.(c)
Sol. $84 \times \frac{1}{4} \div 21^2 + ? = \frac{7}{147} \times 21 - \frac{20}{21}$
$84 \times \frac{1}{4} \times \frac{1}{441} + ? = 1 - \frac{20}{21}$
$\frac{1}{21} + ? = \frac{1}{21}$
$? = 0$

S11. Ans.(b)
Sol. $\sqrt{\frac{3840}{60} + \frac{1440}{40} - \frac{1330}{70}}$
$= \sqrt{64 + 36 - 19}$
$= \sqrt{81}$
$= 9$

S12. Ans.(c)
Sol. $25 \times 18 + \frac{4200}{40} - \frac{525}{105} = 740 - ?$
$450 + 105 - 5 = 740 - ?$
$?= 740 - 550$
$= 190$

S13. Ans.(d)
Sol.
$3845 + 4380 + 2640 - 5965 = (?)^2$
$(?)^2 = 10865 - 5965$
$= 4900$
$? = \sqrt{4900}$
$= 70$

S14. Ans.(b)
Sol.
$400 \div 20 \times 35 + 6666 \div 33 + ? = 1100$
$20 \times 35 + 202 + ? = 1100$
$?= 1100 - (700 + 202)$
$= 1100 - 902$
$= 198$

S15. Ans.(b)
Sol.
$28 \times 14.5 + 1680 \div 15 + 445 = 1000 - ?$
$406 + 112 + 445 = 1000 - ?$
$963 = 1000 - ?$
$?= 1000 - 963 = 37$

S16. Ans.(c)
Sol.
$\frac{130}{100} \times 1200 + \frac{1250}{50} \times 30 = ?$
$130 \times 12 + 25 \times 30 = ?$
$? = 1560 + 750$
$? = 2310$

S17. Ans.(a)
Sol.
$\frac{156}{13} + (3)^2 \times 40 = \frac{?}{100} \times 600$
$12 + 9 \times 40 = ? \times 6$
$? = \frac{372}{6} = 62$

S18. Ans.(a)
Sol.
$\sqrt{81 \times 36} + \frac{680}{17} = ? + (512)^{\frac{1}{3}}$
$\sqrt{2916} + 40 = ? + 8$
$? = 54 + 40 - 8 = 86$

S19. Ans.(e)
Sol.
$\frac{1600}{100} \times 140 + \frac{?}{100} \times 1600 = 72 \times 40$
$16 \times 140 + 16 \times ? = 72 \times 40$
$2240 + 16 \times ? = 2880$
$? = \frac{640}{16} = 40$

S20. Ans.(d)
Sol.
$(17)^2 + (22)^2 + (8)^2 + ? = 1750 - 820 + 2210$
$? + 289 + 484 + 64 = 1750 - 820 + 2210$
$? = 2303$

S21. Ans.(a)
Sol.
$308 + 672 - \frac{40}{100} \times ? + \frac{80 \times 355}{100} = (28)^2$
$980 + 284 - 784 = \frac{2 \times ?}{5}$
$? = \frac{480 \times 5}{2}$
$? = 1200$

S22. Ans.(b)
Sol.
$\frac{178+?}{8} + 25 \times 42 - \frac{16}{100} \times 400 = (32)^2$
$\frac{178+?}{8} = 1024 + 64 - 1050$
$? = 38 \times 8 - 178$
$? = 126$

S23. Ans.(e)
Sol.
$\sqrt{1296} + \sqrt{2025} + \sqrt{1521} - \sqrt{?} = \frac{13}{100} \times 900$
$36 + 45 + 39 - \sqrt{?} = 117$
$\sqrt{?} = 120 - 117$
$? = 9$

S24. Ans.(b)
Sol.
$350 + \frac{56 \times 240}{14} + \sqrt{?} = (11)^3$
$\sqrt{?} = 1331 - 350 - 960$
$\sqrt{?} = 21$
$? = 441$

S25. Ans.(c)
Sol.
$32 \times 35 + \sqrt{961} + \frac{19 \times ?}{100} = \frac{40}{100} \times 3305$
$1120 + 31 + \frac{19 \times ?}{100} = 1322$
$\frac{19 \times ?}{100} = 1322 - 1151$
$? = \frac{171 \times 100}{19}$
$? = 900$

S26. Ans.(b)
Sol.
$1782 \div 54 + 456 - 2346 \times 1 = ? \times 3$
$\Rightarrow 33 + 456 - 2346 = ? \times 3$
$\Rightarrow -1857 = ? \times 3$
$\Rightarrow ? = \frac{-1857}{3}$
$= -619$

S27. Ans.(c)
Sol.
$(575 + 7511 - 2769) \div (76 \times 1 + 675 - 342) = \sqrt{?}$
$= 5317 \div 409 = \sqrt{?}$
$\Rightarrow ? = (13)^2 = 169$

S28. Ans.(a)
Sol.
$\left[(\sqrt{3844 \times 9}) \div (27)^{\frac{1}{3}}\right] \times 23 = ?^2 + 337$
$\Rightarrow [(62 \times 3) \div 3] \times 23 = ?^2 + 337$
$\Rightarrow 1426 - 337 = ?^2$
$\Rightarrow ? = \sqrt{1089}$
$= 33$

S29. Ans.(d)
Sol.
$= \sqrt{(96) \times 12 \div 18 + 26 - 9} = (65 - ?)\%$ of 36
$\Rightarrow 9 = \frac{(65 - ?)}{100} \times 36 \Rightarrow (65 - ?) = \frac{9 \times 100}{36}$
$\Rightarrow ? = 65 - 25 = 40$

S30. Ans.(a)
Sol.
$12 \times \sqrt{225} + 1212 - (1053 \div 9) = ?$
$\Rightarrow 1392 - (117) = ?$
$\Rightarrow ? = 1275$

S31. Ans.(b)
Sol.
$\frac{42}{100} \times 350 - \frac{28}{100} \times 400 = ?$
$147 - 112 = ?$
$? = 35$

S32. Ans.(d)
Sol.
$\sqrt{(123.09 + 465.05) \div 11.99} + ? = 240.02 \div 1.989$
$\sqrt{\frac{123+465}{12}} + ? = \frac{240}{2}$
$\sqrt{49} + ? = 120$
$? = 113$

S33. Ans.(e)
Sol.
$(15.99)^2 - 14.04 \times 8.99 + ? = 154.999$
$16^2 - 14 \times 9 + ? = 155$
$? = 155 + 126 - 256$
$? = 25$

S34. Ans.(a)
Sol.
$\frac{62}{100} \times 250 - \frac{20}{100} \times 105 - ? = 110$
$155 - 21 - 110 = ?$
$? = 24$

S35. Ans.(c)
Sol.
$45\%\ of\ 220.09 + 30\%\ of\ 160.06 = ?^2 + 2.99$
$\frac{45}{100} \times 220 + \frac{30}{100} \times 160 = ?^2 + 3$
$99 + 48 - 3 = ?^2$
$? = 12$

S36. Ans.(a)
Sol.
$1229.99 + 2120.09 - 3049.987 = ?$
$1230 + 2120 - 3050 = ?$
$? = 300$

S37. Ans.(e)
Sol.
$\sqrt{\sqrt{(99.99 + 104.99 \times 5}} = ? \div 8.989$
$\sqrt{\sqrt{100 + 105 \times 5}} = \frac{?}{9}$
$\sqrt{\sqrt{625}} = \frac{?}{9}$
$? = 45$

S38. Ans.(d)
Sol.
$35.99 \times 4.98 - 1199.99 \div 7.99 = ?$
$36 \times 5 - \frac{1200}{8} = ?$
$? = 180 - 150$
$? = 30$

S39. Ans.(b)
Sol.
$?^2 + 60\%\ of\ 239.99 = 55\%\ of\ 320.02 + 3.98$
$?^2 + \frac{60}{100} \times 240 = \frac{55}{100} \times 320 + 4$
$?^2 + 144 = 176 + 4$
$?^2 = 180 - 144$
$? = 6$

S40. Ans.(c)
Sol.
$524.90 + 125.05 = ? \times 9.99$
$525 + 125 = ? \times 10$
$? = \frac{650}{10}$
$? = 65$

S41. Ans.(e)
Sol.
$\sqrt{144.04} \times 15\%\ of\ 120.09 = ? - 54.99 \times 3.03$
$\sqrt{144} \times \frac{15}{100} \times 120 = ? - 55 \times 3$
$12 \times 18 = ? - 165$
$? = 216 + 165$
$? = 381$

S42. Ans.(a)
Sol.
$13.03 \times 7 + ? = 30.03\%\ of\ 349.99$
$13 \times 7 + ? = \frac{30}{100} \times 350$
$91 + ? = 105$
$? = 14$

S43. Ans.(d)
Sol.
$32\%\ of\ 600.02 - 19.99\%\ of\ 400.04 + ? = 859.99 \div 2$
$\frac{32}{100} \times 600 - \frac{20}{100} \times 400 + ? = \frac{860}{2}$
$192 - 80 + ? = 430$
$? = 318$

S44. Ans.(b)
Sol.
$\frac{141}{20.09} + \frac{279.89}{39.99} - \sqrt{?} = 10.01$
$\frac{140}{20} + \frac{280}{40} - \sqrt{?} = 10$
$\sqrt{?} = 7 + 7 - 10$
$? = 16$

S45. Ans.(c)
Sol.
$8.98 \times 60.02 - 19.99^2 + 10.01\%\ of\ 130.09 = ?$
$9 \times 60 - 20^2 + \frac{10}{100} \times 130 = ?$
$540 - 400 + 13 = ?$
$? = 153$

S46. Ans.(d)
Sol.
Wrong no. = 22
$28 \times 0.5 = 14$
$14 \times 1 = 14$
$14 \times 1.5 = 21$
$21 \times 2 = 42$
$42 \times 2.5 = 105$
$105 \times 3 = 315$

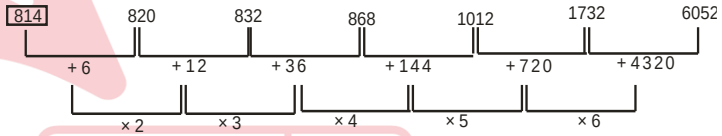
S47. Ans.(e)
Sol.
Wrong no. = 47
$5 + (1^2 + 1) = 7$
$7 + (2^2 + 2) = 13$
$13 + (3^2 + 3) = 25$
$25 + (4^2 + 4) = 45$
$45 + (5^2 + 5) = 75$
$75 + (6^2 + 6) = 117$

S48. Ans.(d)
Sol.
Wrong no. = 2400
$288000 \div 12 = 24000$
$24000 \div 10 = 2400$
$2400 \div 8 = 300$
$300 \div 6 = 50$
$50 \div 4 = 12.5$
$12.5 \div 2 = 6.25$

S49. Ans.(a)
Sol.
Wrong no. = 120
$118 + 7 = 125$
$125 + 11 = 136$
$136 + 13 = 149$
$149 + 17 = 166$
$166 + 19 = 185$
$185 + 23 = 208$

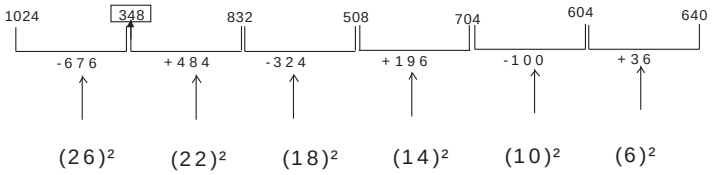
S50. Ans.(b)
Sol.
Wrong no. = 214
$205 + 2^3 = 213$
$213 - 3^3 = 186$
$186 + 4^3 = 250$
$250 - 5^3 = 125$
$125 + 6^3 = 341$
$341 - 7^3 = -2$

S51. Ans.(b)
Sol. Wrong number = 810
Pattern of series –



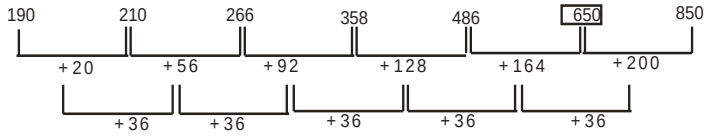
So, there should be 814 in place of 810.

S52. Ans.(d)
Sol. Wrong number = 350
Pattern of series –



So, there should be 348 in place of 350.

S53. Ans.(a)
Sol. Wrong number = 646
Pattern of series –

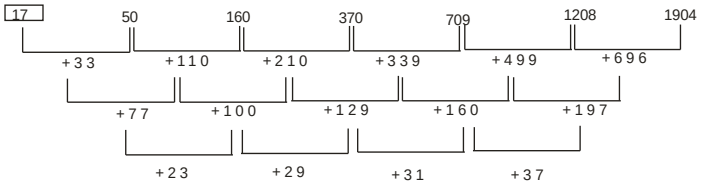


So, there should be 650 in place of 646.

S54. Ans.(e)

Sol. Wrong number = 15

Pattern of series –

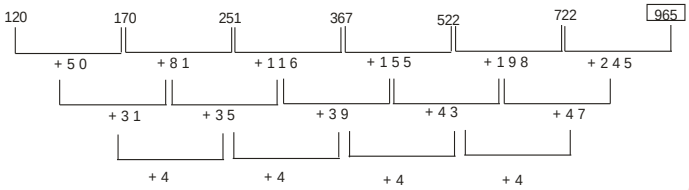


So, there should be 17 in place of 15.

S55. Ans.(b)

Sol. Wrong number = 990

Pattern of series –

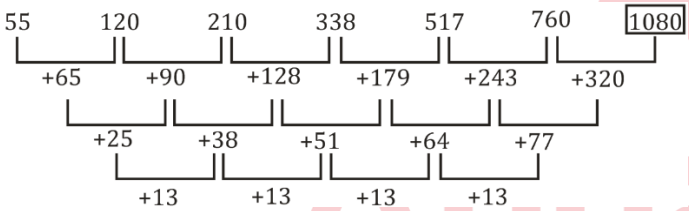


So, there should be 965 in place of 990.

S56. Ans.(b)

Sol. Wrong number = 1090

Pattern of series –

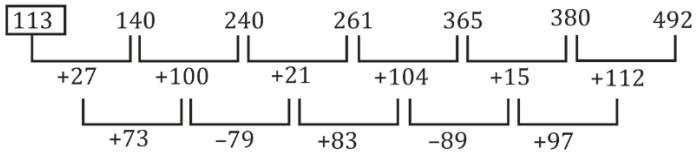


So, there should be 1080 in place of 1090.

S57. Ans.(e)

Sol. Wrong number = 110

Pattern of series –

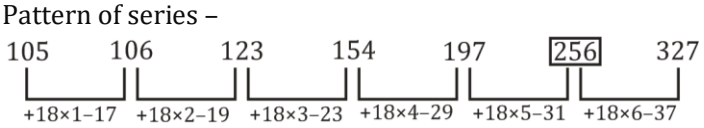


So, there should be 113 in place of 110.

S58. Ans.(d)

Sol. Wrong number = 255

Pattern of series –

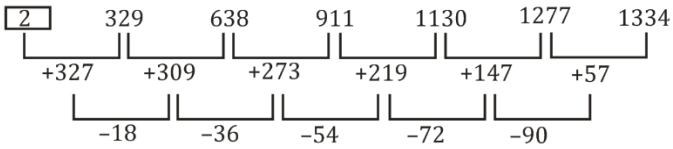


So, there should be 256 in place of 255.

S59. Ans.(a)

Sol. Wrong number = 1

Pattern of series –

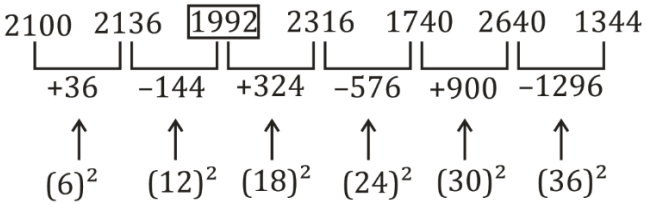


So, there should be 2 in place of 1.

S60. Ans.(b)

Sol. Wrong number = 1990

Pattern of series –



So, there should be 1992 in place of 1990.

S61. Ans.(a)

Sol.

I:

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

$2x^2 + 4x - 3x - 6 = 0$

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

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

$x = 1.5, -2$

II:

$y^2 + 6y + 9 = 0$

$y^2 + 3y + 3y + 9 = 0$

$y(y + 3) + 3(y + 3) = 0$

$(y + 3)(y + 3) = 0$

$y = -3, -3$

So, $x > y$

S62. Ans.(d)

Sol.

I:

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

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

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

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

$x = 2, 2$

II:

$y^2 - 10y + 16 = 0$

$y^2 - 8y - 2y + 16 = 0$

$y(y - 8) - 2(y - 8) = 0$

$(y - 8)(y - 2) = 0$

$y = 8, 2$

So, $x \leq y$

S663. Ans.(e)
Sol.
I:
$2x^2 + 7x + 6 = 0$
$2x^2 + 3x + 4x + 6 = 0$
$x(2x + 3) + 2(2x + 3) = 0$
$(2x + 3)(x + 2) = 0$
$x = -\frac{3}{2}, -2$
II:
$3y^2 + 11y + 10 = 0$
$3y^2 + 6y + 5y + 10 = 0$
$3y(y + 2) + 5(y + 2) = 0$
$(3y + 5)(y + 2) = 0$
$y = -\frac{5}{3}, -2$
So, no relation can be established.

S64. Ans.(d)
Sol.
I:
$x^2 - 2x - 24 = 0$
$x^2 - 6x + 4x - 24 = 0$
$x(x - 6) + 4(x - 6) = 0$
$(x - 6)(x + 4) = 0$
$x = -4, 6$
II:
$y^2 - 12y + 36 = 0$
$y^2 - 6y - 6y + 36 = 0$
$y(y - 6) - 6(y - 6) = 0$
$(y - 6)(y - 6) = 0$
$y = 6, 6$
So, $x \leq y$

S65. Ans.(a)
Sol.
I:
$4x^2 + 11x + 6 = 0$
$4x^2 + 8x + 3x + 6 = 0$
$4x(x + 2) + 3(x + 2) = 0$
$(4x + 3)(x + 2) = 0$
$x = -\frac{3}{4}, -2$
II:
$y^2 + 10y + 25 = 0$
$y^2 + 5y + 5y + 25 = 0$
$y(y + 5) + 5(y + 5) = 0$
$(y + 5)(y + 5) = 0$
$y = -5, -5$
So, $x > y$

S66. Ans.(a)
Sol.
I:
$4x^2 - 20x + 25 = 0$
$4x^2 - 10x - 10x + 25 = 0$
$2x(2x - 5) - 5(2x - 5) = 0$
$(2x - 5)(2x - 5) = 0$
$x = \frac{5}{2}, \frac{5}{2}$
II:
$5y^2 - 6y - 8 = 0$
$5y^2 - 10y + 4y - 8 = 0$
$5y(y - 2) + 4(y - 2) = 0$
$(5y + 4)(y - 2) = 0$
$y = 2, -\frac{4}{5}$
So, $x > y$

S67. Ans.(b)
Sol.
I:
$x^2 - 2x - 15 = 0$
$x^2 - 5x + 3x - 15 = 0$
$x(x - 5) + 3(x - 5) = 0$
$(x + 3)\ (x - 5) = 0$
$x = -3, 5$
II:
$y^2 - 15y + 56 = 0$
$y^2 - 8y - 7y + 56 = 0$
$y(y - 8) - 7(y - 8) = 0$
$(y - 7)(y - 8) = 0$
$y = 7, 8$
So, $x < y$

S68. Ans.(e)
Sol.
I:
$10x^2 + 19x + 7 = 0$
$10x^2 + 14x + 5x + 7 = 0$
$2x(5x + 7) + 1(5x + 7) = 0$
$(2x + 1)(5x + 7) = 0$
$x = -\frac{1}{2}, -\frac{7}{5}$
II:
$5y^2 + 16y + 12 = 0$
$5y^2 + 6y + 10y + 12 = 0$
$y(5y + 6) + 2(5y + 6) = 0$
$(y + 2)(5y + 6) = 0$
$y = -2, -\frac{6}{5}$
So, no relation can be established.

S69. Ans.(a)
Sol.
I:
$x^2 - 20x + 75 = 0$
$x^2 - 15x - 5x + 75 = 0$
$x(x - 15) - 5(x - 15) = 0$
$(x - 5)(x - 15) = 0$
$x = 5, 15$
II:
$y^2 + 19y + 84 = 0$
$y^2 + 12y + 7y + 84 = 0$
$y(y + 12) + 7(y + 12) = 0$
$(y + 12)(y + 7) = 0$
$y = -12, -7$
So, $x > y$

S70. Ans.(e)
Sol.
I:
$x^2 - 9x - 22 = 0$
$x^2 - 11x + 2x - 22 = 0$
$x(x - 11) + 2(2x - 11) = 0$
$(x + 2)(x - 11) = 0$
$x = -2, 11$
II:
$y^2 - 17y + 66 = 0$
$y^2 - 11y - 6y + 66 = 0$
$y(y - 11) - 6(y - 11) = 0$
$(y - 11)(y - 6) = 0$
$y = 6, 11$
So, no relation can be established.

S71. Ans.(b)
Sol.
I:
$4x^2 + 19x + 15 = 0$
$4x^2 + 15x + 4x + 15 = 0$
$x(4x + 15) + 1(4x + 15) = 0$
$(4x + 15)(x + 1) = 0$
$x = -1, -15$
II:
$8y^2 + 10y + 3 = 0$
$8y^2 + 6y + 4y + 3 = 0$
$2y(4y + 3) + 1(4y + 3) = 0$
$(4y + 3)(2y + 1) = 0$
$y = -\frac{3}{4}, -\frac{1}{2}$
So, $x < y$

S72. Ans.(c)
Sol.
I:
$x^2 - 18x + 56 = 0$
$x^2 - 14x - 4x + 56 = 0$
$x(x - 14) - 4(x - 14) = 0$
$(x - 4)(x - 14) = 0$
$x = 4, 14$
II:
$y^2 + 4y - 32 = 0$
$y^2 + 8y - 4y - 32 = 0$
$y(y + 8) - 4(y - 8) = 0$
$(y - 4)(y + 8) = 0$
$y = -8, 4$
So, $x \geq y$

S73. Ans.(d)
Sol.
I:
$x^2 + 14x - 72 = 0$
$x^2 + 18x - 4x - 72 = 0$
$x(x + 18) - 4(x + 18) = 0$
$(x + 18)(x - 4) = 0$
$x = -18, 4$
II:
$y^2 - 13y + 36 = 0$
$y^2 - 9y - 4y + 36 = 0$
$y(y - 9) - 4(y - 9) = 0$
$(y - 4)(y - 9) = 0$
$y = 4, 9$
So, $x \leq y$

S74. Ans.(d)
Sol.
I:
$x^2 - 9^2 = 12^2$
$x^2 = 144 + 81$
$x^2 = 225$
$x = 15, -15$
II:
$y^3 = 3375$
$y = 15$
So, $x \leq y$

S75. Ans.(b)
Sol.
I:
$\frac{x^{\frac{5}{2}}}{28} = \frac{x^{\frac{3}{2}}}{7}$
$x^{\frac{5}{2} - \frac{3}{2}} = \frac{28}{7}$
$x = 4$
II:
$11y + (7 \times 6) = 97$
$11y + 42 = 97$
$11y = 55$
$y = 5$
So, $x < y$

S76. Ans.(a)
Sol.
I. $x^2 - 22x + 72 = 0$
x^2 -18x -4x +72=0
x(x-18)-4(x-18)=0
(x-18)(x-4)=0
x = 18, 4
II. $y^2 + 11y + 30 = 0$
y^2+5y +6y +30=0
y(y+5) +6(y+5)=0
(y+5)(y+6)=0
y= -5,-6
So, x>y

S77. Ans.(e)
Sol.
I. $x^2 - 23x + 120 = 0$
x^2 -15x -8x +120=0
x(x-15)- 8(x-15)=0
(x-15)(x-8)=0
x = 15, 8
II. $y^2 - 17y + 70 = 0$
y^2-10y -7y +70=0
y(y-10) -7(y-10)=0
(y-7)(y-10)=0
y= 10, 7
So, no relation can be established

S78. Ans.(b)
Sol.
I. $x^2 - 15x + 54 = 0$
x^2-9x-6x+54=0
x(x-9)-6(x-9)=0
(x-9)(x-6)=0
x= 9, 6
II. $y^2 + 10y - 96 = 0$
y^2+16y-6y-96 =0
y(y+16)-6(y+16)=0
(y+16)(y-6)=0
y = 6,−16
So, $x \geq y$

S79. Ans.(b)
Sol.
I.x^3 +440=2168
x^3=2168-440
x^3=1728
x =12
II. $y^2 - 23 = 121$
y^2=121+23
y^2=144
y =12, −12
So, x ≥ y

S80. Ans.(c)
Sol.
I. $x^2 + 4x - 12 = 0$
x^2+6x-2x-12=0
x(x+6)-2(x+6)=0
(x+6) (x-2)=0
x=-6, 2
II. $y^2 - 9y + 20 = 0$
y^2-5y-4y+20=0
y(y-5)-4(y-5)=0
(y-5) (y-4)=0
y=5, 4
$so, y > x$

S81. Ans.(e)
Sol.
I. $x^2 - 25x + 100 = 0$
x^2 -20x -5x +100=0
x(x-20)-5(x-20)=0
(x-20) (x-5)=0
x =20,5
II. $y^2 - 27y + 110 = 0$
y^2-22y -5y +110=0
y(y-22) -5(y-22)=0
(y-22)(y-5)=0
y=22,5
So, no relation can be established between x and y.

S82. Ans.(d)
Sol.
I. $x^2 = 289$
x =$\sqrt{289}$
x =17, −17
II. $y = \sqrt{289}$
y =17
So, x ≤ y

S83. Ans.(d)
Sol.
I. $x^2 + 12x + 32 = 0$
$x^2+8x+4x+32=0$
$x(x+8)+4(x+8)=0$
$(x+8)(x+4)=0$
$x= -8, -4$
II. $y^2 + 7y + 12 = 0$
$y^2+ 3y+4y+12 =0$
$y(y+3)+4(y+3)=0$
$(y+4)(y+3)=0$
$y = -4, -3$
So, $y \geq x$

S84. Ans.(a)
Sol.
I. $3x^2 + 16x + 20 = 0$
$3x^2 +6x +10x +20 =0$
$3x(x+2) +10(x+2)=0$
$(3x+10)(x+2)=0$
$x= -2, -\frac{10}{3}$
II. $y^2 + 14y + 48 =0$
$y^2 +8y +6y +48 =0$
$y(y +8)+6(y+8)=0$
$(y+6)(y+8)=0$
$y =-6, -8$
So, x > y

S85. Ans.(e)
Sol.
I. $x^2 + x - 72 = 0$
$x^2+ 9x-8x-72=0$
$x(x+9)-8(x+9)=0$
$(x+9)(x-8)=0$
$x = 8, -9$
II. $y^2 + 13y + 42=0$
$y^2 +6y+7y+42 =0$
$y(y+6)+7(y+6)=0$
$(y+6)(y+7)=0$
$y = -6, -7$
So, no relation can be established between x and y.

S86. Ans.(c)
Sol.
I. $x^2 + 5x + 6 = 0$
$x^2 + 3x + 2x + 6 = 0$
$x(x + 3) + 2(x + 3) = 0$
$(x + 3)(x + 2) = 0$
$x = -2, -3$
II. $y^2 - 9y + 14 = 0$
$y^2 - 7y - 2y + 14 = 0$
$y(y - 7) - 2(y - 7) = 0$
$(y - 2)(y - 7) = 0$
$y = 2, 7$
So, y>x

S87. Ans.(b)
Sol.
I. $x^2 - 14x + 45 = 0$
$x^2 - 9x - 5x + 45 = 0$
$x(x - 9) - 5(x - 9) = 0$
$(x - 9)(x - 5) = 0$
$x = 9, 5$
II. $y^2 + 2y - 35 = 0$
$y^2 + 7y - 5y - 35 = 0$
$y(y + 7) - 5(y + 7) = 0$
$(y - 5)(y + 7) = 0$
$y = 5, -7$
So, $x \geq y$

S88. Ans.(e)
Sol.
I. $x^2 + 11x + 18 = 0$
$x^2 + 9x + 2x + 18 = 0$
$x(x + 9) + 2(x + 9) = 0$
$(x + 9)(x + 2) = 0$
$x = -2, -9$
II. $y^2 + 6y + 8 = 0$
$y^2 + 4y + 2y + 8 = 0$
$y(y + 4) + 2(y + 4) = 0$
$(y + 4)(y + 2) = 0$
$y = -4, -2$
So, no relation can be established

S89. Ans.(c)
Sol.
I. $x^2 + 5x + 6 = 0$
$x^2 + 3x + 2x + 6 = 0$
$x(x + 3) + 2(x + 3) = 0$
$(x + 3)(x + 2) = 0$
$x = -3, -2$
II. $y^2 - 15y = 16$
$y^2 - 15y - 16 = 0$
$y^2 - 16y + y - 16 = 0$
$y(y - 16) + 1(y - 16) = 0$
$(y + 1)(y - 16) = 0$
$y = -1, 16$
Clearly, $x < y$

S90. Ans.(a)
Sol.
Multiplying II by 3 and subtracting II from I, we get,
$y = -1$ *and* $x = 3$
So, $x > y$

S91. Ans.(b)
Sol. Required percentage $= \frac{(22+23)-10}{22+23} \times 100$
$\approx 78\%$

S92. Ans.(c)

Sol. Required average $= \frac{1}{3} \times (12 + 15 + 18)\% \times 22500$

$= \frac{15}{100} \times 22500$

$= 3375$

S93. Ans.(d)

Sol. Required no. of passenger $= 22500 \times \frac{23-12}{100} = 2475$

S94. Ans.(d)

Sol. Required ratio $= 22500 \times \frac{10}{100} \times \frac{7}{15} : 22500 \times \frac{23}{100} \times \frac{5}{23}$

$= 14:15$

S95. Ans.(a)

Sol. Passenger travelling to Rewari $= 22500 \times \frac{18}{100} = 4050$

Passenger travelling to Panipat $= 22500 \times \frac{15}{100} = 3375$

Required difference $= 3375 \times 75 \times \frac{4}{3} - 4050 \times 75$

$= 75 \times (4500 - 4050)$

$= 75 \times 450$

$= 33750$ Rs.

Sol (96-100): -

For city C

Total population of city C $= \frac{6000}{6.25} \times 100 = 96000$

Literate population of city C $= 96000 \times \frac{2}{3} = 64000$

Illiterate population $= 96000 \times \frac{1}{3} = 32000$

Graduate population $= 64000 \times \frac{40}{100} = 25600$

For city B

Total population = 16000

Literate population = 6000

Illiterate population $= 16000 - 6000 = 10000$

Graduate population $= 6000 \times \frac{40}{100} = 2400$

For city A

Total population = 22000

Literate population $= 22000 \times \frac{5}{11} = 10000$

Illiterate population $= 22000 - 10000 = 12000$

Graduate population $= 10000 \times \frac{40}{100} = 4000$

S96. Ans.(c)

Sol. Required percentage $= \frac{6000}{12000} \times 100 = 50\%$

S97. Ans.(d)

Sol. Required ratio = 25600: 16000

$= 8:5$

S98. Ans.(a)

Sol. Required difference $= 32000 - 2400 = 29600$

S99. Ans.(b)

Sol. Population which is literate but ungraduated from city A $= 10000 \times \frac{60}{100} = 6000$

Required percentage $= \frac{6000}{2400} \times 100 = 250\%$

S100. Ans.(c)

Sol. Graduate male from city C $= \frac{25600}{16} \times 9 = 14400$

Literate but ungraduated from city B $= 6000 \times \frac{60}{100} = 3600$

Required difference $= 14400 - 3600 = 10800$

S101. Ans.(b)

Sol. Cost price of per kg rice $= \frac{2200}{55} \times \frac{100}{160} = Rs.25$

Selling price of per kg sugar $= \frac{1200}{40} = Rs.30$

Required difference $= 30 - 25 = Rs.5$ less

S102. Ans.(e)

Sol. selling price of one kg wheat $= \frac{900}{45} = Rs.20$

Selling price of one kg salt $= \frac{600}{60} = Rs.10$

Required average selling price $= \frac{20\times3+10\times2}{3+2} = \frac{80}{5}$

$=$ Rs. 16 per kg

S103. Ans.(b)

Sol. Required percentage $= \frac{900}{2200-600} \times 100 = 56.25\%$

S104. Ans.(b)

Sol. selling price of a kg pulse $= \frac{3750}{50} = Rs.75$

Profit earned on selling of one kg pulse $= 75 - 60 = Rs.15$

Total profit $= 15 \times 40 = Rs.600$

S105. Ans.(e)

Sol. Required average quantity $= \frac{1}{3} \times (55 + 50 + 45)$

$= \frac{150}{3}$

$= 50$ kg

S106. Ans.(a)

Sol.

No. of male student playing Hockey of college L

$= 450 \times \frac{8}{9} = 400$

Average no. of student playing Hockey of college M & O

$= \frac{400+500}{2}$

$= 450$

Required percentage $= \frac{400}{450} \times 100 = 88\frac{8}{9}\%$

S107. Ans.(c)
Sol.
Student who left playing Cricket of college N
$= 350 \times \frac{1}{7} = 50$
Total student playing Football of college N
$= 450 + 50 = 500$
Required ratio $= \frac{500+300}{500+300} = 1 : 1$

S108. Ans.(b)
Sol.
Average no. of student playing Hockey of college K, L and O
$= \frac{(250+450+500)}{3} = 400$
Average no. of student playing Football of college K, L and M
$= \frac{400+350+300}{3} = 350$
Required difference = 400 – 350 = 50

S109. Ans.(e)
Sol.
Total no. of student playing Cricket of college L and M together
= 400 + 300 = 700
Total no. of student playing Hockey of college K and M together
= 250 + 400 = 650
Required percentage $= \frac{700-650}{650} \times 100 = 7\frac{9}{13}\%$

S110. Ans.(d)
Sol.
Total student in college K in 2014 = 400 + 500 + 250 = 1150
Total student in college K in 2015
$= 1150 \times \frac{120}{100} = 1380$
Student playing Football of college K in 2015
$= 1380 \times \frac{5}{10}$
$= 690$
Required average $= \frac{400+690}{2}$
$= \frac{1090}{2}$
$= 545$

Sol (111-115)
ATQ,
Mortality rate for China $= \frac{4000}{80000} \times 100 = 5\%$
Mortality rate for USA $= \frac{11000}{350000} \times 100 = 3.14\%$
Mortality rate for Italy $= \frac{17500}{130000} \times 100 = 13.46\%$
Mortality rate for Spain $= \frac{15000}{140000} \times 100 = 10.71\%$

S111. Ans.(b)
Sol. USA has lowest mortality rate, which is 3.14%

S112. Ans.(d)
Sol. Required % $= \frac{350000-17500}{17500} \times 100 = 1900\%$

S113. Ans.(c)
Sol. Required ratio $= \frac{\frac{15000}{140000}\times 100}{\frac{4000}{80000}\times 100} = 15 : 7$

S114. Ans.(a)
Sol. Required % $= \frac{4000+11000+17500+15000}{80000} \times 100 =$ 59.375%

S115. Ans.(e)
Sol. New total confirmed cases in china = $80000 \times \frac{5}{4} =$ 100000
Mortality rate in china is 5%.
New number of total deaths = $100000 \times \frac{5}{100} = 5000$

S116. Ans.(e)
Sol. Price of a one kg sugar $= 84 \times \frac{11}{21} = Rs\ 44$
Price of one kg of salt $= 840 \times \frac{10}{21} = Rs40$
Required difference = (20 × 44 – 15 × 40)
= 880 – 600
= $Rs.$ 280

S117. Ans.(a)
Sol. Price of one kg of tea $= \frac{900}{18} = Rs50$
Price of one kg of rice $= \frac{1500}{30} = Rs50$
Required % $= \frac{50-50}{50} \times 100 = 0\%$

S118. Ans.(d)
Sol. Required ratio $= \frac{63\times 12}{42\times 25} = \frac{18}{25}$

S119. Ans.(b)
Required%$= \frac{20+15}{30+12} \times 100 = 83\frac{1}{3}\%$

S120. Ans.(b)
Sol. Required sum = (56 × 15) + (32 × 30) + (40 × 25)
= 2800 Rs.

S121. Ans.(c)
Sol.
Let length of train A = l metres.
And let speed of train A = S m/s.
ATQ,
Speed of train B = $\frac{450+150}{24}$
= 25 m/s
Speed of train A, S = $\frac{l+230}{29}$ ...(i)
Now, $25 - S = \frac{450+l}{160}$
$S = 25 - \frac{450+l}{160}$ ...(ii)
On solving (i) & (ii):
$\frac{l+450}{160} = 25 - \frac{l+230}{29}$
l=350 metres.
So, speed of train A = $\frac{350+230}{29}$
= 20 m/s.
Required time = $\frac{350+50}{20}$
= 20 sec.

S122. Ans.(e)
Sol. Let the speed of train A and train B be 17X m/s and 13X m/s respectively.
And let the length of train B = Y meter
ATQ, $\frac{950+Y}{17X-13X} = 16$
Y = 64X -950,
So, length can't be determined with given data.

S123. Ans.(d)
Sol.
Let length of train = 2L m
Length of tunnel = L m
ATQ,
$3L = 144 \times \frac{5}{18} \times 30$
L = 400 m
Length of train = 800 m
∴ Length of other train = 2 × 800 = 1600 m
60% of speed = $144 \times \frac{5}{18} \times \frac{60}{100}$ = 24 m/sec.
∴ (1600 + 800) = 24 × time
∴ time = 100 sec.

S124. Ans.(b)
Sol.
Let us assume the original speed of Deepak be 4x km/hr and original time taken by Deepak be T hr.
ATQ, decreased speed of Deepak = 3x km/hr,
And increased time of Deepak = (T+$\frac{24}{60}$)
$= (T + 0.40)$ hours
So, $4x \times T = 3x \times (T + 0.4)$
T = 1.2hour = 72 minutes

S125. Ans.(b)
Sol.
let speed of boat in still water and speed of Stream be P and Q kmph respectively.
ATQ,
P-Q = $\frac{40}{5} = 8\ kmph$ (Upstream Speed)
P+Q = 16 *kmph* (Downstream Speed)
ATQ, Downstream Speed, X-4 = P+Q
So, X = 16+4 = 20.

S126. Ans.(c)
Sol.
Given distance between P and Q is 900 km.
speed of car B = $\frac{900}{(X+4)}$ km/h.
Speed of car A = $\frac{900}{X}$ km/h.
ATQ,
Car B started from P at 6:00am
and car A started from P at 8:00 am
They both met at 10:30 am i.e.
$\frac{900}{(X+4)} \times \frac{9}{2} = \frac{900}{X} \times \frac{5}{2}$
$\Rightarrow$9X = 5 (X+4)
$\Rightarrow$ 4X = 20
X = 5 hours
So, speed of car B = $\frac{900}{(5+4)}$ =100 kmph.
Required distance= $100 \times \frac{9}{2}$ = 450 km

S127. Ans.(b)
Sol.
Now, let speed of the boat in still water and the speed of the stream be a km/hr. & b km/hr. respectively.
So, upstream speed of boat = $(a - b)$ km/hr.
ATQ,
$a - b = 15$
Required time= $\frac{120}{(a-b)}$
= $\frac{120}{15}$
=8 hr.

S128. Ans.(c)
Sol.
Let the distance between Amit's home and his office is D km.
ATQ, $\frac{D}{30} + \frac{D}{X} = \frac{2D}{33}$
X = 36.67 km/hr

S129. Ans.(a)
Sol.
Time taken by X = 8 hr.
Time taken by Y = 7 hr.

	Time	Speed	LCM
X	8 hr	7	56 (Total distance)
Y	7 hr	8	

∴ time taken to cross each other
$= \frac{56}{15} = 3\frac{11}{15}$ hr.
= 3 hr 44 min.
∴ Required time to cross = 11 : 44 am

S130. Ans.(b)
Sol.
Let initial speed of the car = s kmph.
And initial time taken by the car to cover the distance = t hours.
So, Total Distance = $s \times t$ km.
ATQ,
$(s-9)(t+2) = (s+5)\left(t-\frac{48}{60}\right)$
s-5t = 5 .....(i)
and,
st = (s-9) (t+2)
2s-9t = 18 .....(ii)
From eq(i) & eq(ii)
t=8 hours
and s= 45 kmph
so, required distance = $45 \times 8 = 360\ km.$

S131. Ans.(b)
Sol.
Let upstream speed of a boat be 7x km/hr.
So, downstream speed of a boat = $\frac{1100}{700} \times 7x$
= 11x km/hr.
Hence, speed of boat in still water = $\frac{7x+11x}{2}$
= 9x km/hr.
And, speed of stream = $11x - 9x$
= 2x km/hr.
ATQ,
$2x = 8$
$x = 4$
Required time = $\frac{176}{11x} + \frac{70}{7x}$
$= \frac{16}{x} + \frac{10}{x}$
$= \frac{26}{x}$
= 6.5 hours

S132. Ans.(b)
Sol.
Let speed of stream = r km/h
A/q,
$(8-r) \times 5 = (8+r) \times 3$
$\Rightarrow 40 - 5r = 24 + 3r$
$\Rightarrow r = \frac{16}{8} = 2\ km/h$

S133. Ans.(b)
Sol.
Let total distance = d
∴ Average speed = $\frac{d}{\frac{d}{24}+\frac{d}{48}}$
= 16 km/h

S134. Ans.(a)
Sol.
Let the total distance = x km
$\frac{x}{12-4} + \frac{x}{12+4} = \frac{90}{60}$
$\frac{x}{8} + \frac{x}{16} = 1.5$
$3x = 1.5 \times 16$
$x = 8$km

S135. Ans.(d)
Sol.
Let one side time taken = t hour
Time taken by car = x hour
ATQ,
$60x + 4(t-x) = 20 \times t$
$\Rightarrow x = \frac{2}{7}t$
Let t = 7y = time taken on train
x = 2y = time taken on car
t−x = 5y = time taken on cycle.
Required Ratio →
$60 \times 2y : 4 \times 5y : 20 \times 7y$
6 : 1 : 7

S136. Ans.(c)
Sol.
In both conical shape volume will be same.
Let base radius of cone is R cm
So, height of the cone = 2R cm.
ATQ,
$\frac{4}{3}\pi(16)^3 = 2 \times \frac{1}{3}\pi R^2 \times 2R$
$R^3 = 16^3$
R =16
Required height = 2R =32 cm.

S137. Ans.(d)
Sol. According to question the first place of the three-letter word will be fix & will be filled by S only.
So, rest two letter will be selected from the rest 6 letter of word STRANGE.
So, Number of possible ways = 6 × 5 = 30

S138. Ans.(b)
Sol. total outcomes = $6^2 = 36$
Favorable outcomes = when sum is 2, 3, 4, 8, 9, 10
(1,1) (1,2) (1,3) (2,1) (2,2) (2,6) (3,1) (3,5) (3,6) (4,4) (4,5) (4,6) (5,3) (5,4) (5,5) (6,2) (6,3) (6,4)
Required probability = $\frac{18}{36} = \frac{1}{2}$

S139. Ans.(a)
Sol.
Let each of base and height of the isosceles right-angle triangle is a meter
so its hypotenuse will be $a\sqrt{2}$ m.
Area of isosceles right-angle triangle = 128 × 16
$\frac{1}{2} \times a \times a = 2048$ m²
$a^2 = 4096$.
a=64 m.
so, its hypotenuse = $64\sqrt{2}$ m.
Now, radius of the Sphere = $\frac{1}{8} \times 64\sqrt{2}$
$= 8\sqrt{2}\ m.$
Total surface area of the sphere = $4\pi \times 8\sqrt{2} \times 8\sqrt{2}$
$=512\pi$ m²

S140. Ans.(d)
Sol.
Let number of employees in 'Adda 247' initially = n
ATQ –
$\frac{(5n+26)}{(n+1)} = (5 + 1)$
5n + 26 = 6n + 6
n = 20
New number of employees in 'Adda 247' = 20 + 1= 21

S141. Ans.(d)
Sol.
Total number of cases when two dices are rolled simultaneously=36
total cases of getting same number on both the dices=(1,1), (2,2), (3,3), (4,4), (5,5), (6,6) = 6
required probability=$1 - \frac{6}{36} = \frac{5}{6}$

S142. Ans.(d)
Sol.
Volume of sphere = $\frac{4}{3}\pi R^3$ (R → Radius)
Volume of cylinder = $\pi r^2 h$ (r → radius of cylinder, h → height of cylinder)
R = r (given)
ATQ,
$\frac{4}{3}\pi R^3 = 288\pi \Rightarrow R^3 = 216 \quad \Rightarrow R = 6cm = r$
Radius of cylinder=r=6cm
Height of cylinder=h=12cm
Volume of cylinder = $\pi r^2 h$
$= 432\pi\ cm^3$

S143. Ans.(c)
Sol. Number of cubes = $\frac{45\times45\times45}{7.5\times7.5\times7.5} = 216$

S144. Ans.(b)
Sol. ATQ, vowels have to come together so A and I together will be treated as a single letter.
And, A and I can change their respective places in 2! Ways.
So, Number of ways = (8-1)! × 2!= 7!× 2!
= 10080 ways

S145. Ans.(a)
Sol. As we know there exist 2 black queens and 2 kings in a set of 52 playing cards.
So, Required Probability = $\frac{^2C_1}{^{52}C_1} + \frac{^2C_1}{^{52}C_1} = \frac{1}{13}$

S146. Ans.(d)
Sol.
Let the radius of cylinder and hemisphere be r cm.
So, height of cylinder = 2r cm.
Surface area of cylinder = 2πrh
$= 4\pi r^2$
Total Surface Area of Hemi-Sphere = $3\pi r^2$
Required result = $\frac{4\pi r^2 - 3\pi r^2}{3\pi r^2} \times 100$
$=33\frac{1}{3}\%$

S147. Ans.(e)
Sol.
Possible cases of balls will be 2 red or 2 Orange or 2 Green.
Required probability = $\frac{^4C_2}{^9C_2} + \frac{^3C_2}{^9C_2} + \frac{^2C_2}{^9C_2} = \frac{6}{36} + \frac{3}{36} + \frac{1}{36} = \frac{5}{18}$

S148. Ans.(a)

Sol. In the word BLASTING, there are two vowels (A, I) and six consonants (B, L, S, T, N, G).

So, required probability = $\frac{7!\times2!}{8!}=\frac{2}{8}=\frac{1}{4}$

S149. Ans.(c)

Sol. radius = r cm

Height =3r cm

ATQ

$2\pi r(r+h)=1232$

$\Rightarrow \quad 2\times\frac{22}{7}\times r\times 4r=1232$

$\Rightarrow$ r = 7cm

Height = h=21cm

Volume of cylinder = $\frac{22}{7}\times 7\times 7\times 21=3234\ cm^3$

S150. Ans.(e)

Sol.

Let us suppose number of green balls in the box = x

ATQ,

$\frac{{}^6C_1}{{}^{(6+5+x)}C_1}=\frac{1}{3}$

$\frac{6}{x+11}=\frac{1}{3}$

x+11 =18

∴ x = 7

S151.Ans.(a)

Sol.

Number of complaints received Tuesday= $100+80+70+110=360$

Number of complaints received on Wednesday= $50+60+120+90=320$

Required difference= $360-320$

$=40$

S152.Ans.(b)

Sol.

Required %= $\frac{(70+110)-(50+60)}{(50+60)}=\frac{70}{110}\times 100=63.63$

S153.Ans.(c)

Sol.

$Required\ ratio=(80+60):(50+90)$

$=1:1$

S154.Ans.(c)

Sol.

$Required\ \%=\frac{(70+120)}{(100+80+70+110)}\times 100$

$=\frac{190}{360}\times 100=52.77\approx 53\ \%$

S155. Ans.(d)

Sol.

$Required\ ratio=(100+80+110):(50+60+120+90)$

$=290:320$

$=29:32$

S156.Ans.(c)

Sol.

Wrong number = 10

Pattern of series –

$8\times 0.5=4$

$4\times 1=4$

$4\times 1.5=\mathbf{6}$

$\mathbf{6}\times 2=12$

$12\times 2.5=30$

$30\times 3=90$

S157. Ans.(c)

Sol.

Wrong number = 11

Pattern of series –

$\mathbf{12}+2^2=16$

$16+3^2=25$

$25+4^2=41$

$41+5^2=66$

$66+6^2=102$

$102+7^2=151$

S158. Ans.(d)

Sol.

Wrong number = 25

Pattern of series –

$21+2^3=\mathbf{29}$

$\mathbf{29}-3^2=20$

$20+2^3=28$

$28-3^2=19$

$19+2^3=27$

$27-3^2=18$

S159.Ans.(a)

Sol.

Wrong number = 104

Pattern of series –

$20+8=28$

$28+12=40$

$40+16=56$

$56+20=76$

$76+24=\mathbf{100}$

$\mathbf{100}+28=128$

S160.Ans.(e)
Sol.
Wrong number = 20
Pattern of series –
$1 \times 1 + 1 = 2$
$2 \times 2 + 2 = 6$
$6 \times 3 + 3 = \mathbf{21}$
$\mathbf{21} \times 4 + 4 = 88$
$88 \times 5 + 5 = 445$
$445 \times 6 + 6 = 2676$

S161.Ans.(a)
Sol.
$63 + 18 = ?^2$
$? = 9$

S162.Ans.(e)
Sol.
$43 - 16 = \sqrt{?} - 12$
$? = 1521$

S163.Ans.(c)
Sol.
$75 - 63 + 25 = ?$
$? = 37$

S164.Ans.(e)
Sol.
$3167 - 2881 - 121 = ? - 41$
$? = 206$

S165.Ans.(d)
Sol.
$\frac{62.5}{100} \times ? - 25 = 225$
$? = \frac{250 \times 100}{62.5}$
$? = 400$

S166. Ans.(b)
Sol.
$\frac{24}{100} \times 450 + ?^2 = 256 - 4$
$?^2 = 252 - 108$
$? = 12$

S167. Ans.(d)
Sol.
$? \times \left(\frac{44}{100} \times 750 + 110\right) = \frac{88}{100} \times 2500$
$? \times 440 = 2200$
$? = 5$

S168. Ans.(a)
Sol.
$4^? + \frac{80}{100} \times 980 = 1040$
$4^? + 784 = 1040$
$4^? = 256$
$? = 4$

S169. Ans.(e)
Sol.
$\frac{1512}{?} + \frac{50}{100} \times 488 = \frac{70}{100} \times 400$
$\frac{1512}{?} = 280 - 244$
$? = 42$

S170. Ans(d)
Sol.
$\frac{?}{100} \times 640 + \frac{40}{100} \times 280 = 400$
$\frac{?}{100} \times 640 = 400 - 112$
$? = \frac{288 \times 100}{640}$
$? = 45$

S171. Ans.(d)
Sol.
Let total production in any of these years be 100x
$\therefore$ Required percent $= \frac{(80x - 70x)}{80x} \times 100$
$= 12.5\ \%$

S172. Ans.(e)
Sol.
Required difference = 60% of 1,50,000 – (20+30) % of 1,50,000
= 15000

S173. Ans.(b)
Sol.
Let total production in any of these years be 100x
Required ratio $= \frac{\frac{30+60+30}{3}\%\text{ of } 100x}{(30+30)\%\text{ of } 100x} = 2:3$

S174. Ans.(d)
Sol.
Let total production in any of these years be 100x
ATQ,
10% of 100x = 12000
x = 1200
Required average $= \frac{10\%\text{ of } 1{,}20{,}000 + 30\%\text{ of } 1{,}20{,}000}{2}$
$= 24000$

S175. Ans.(b)
Sol.
Let total production in any of these years be 100x
$\therefore \frac{20}{100} \times 100x = 18000$
x=900
Total production in 2019 $= \frac{120}{100} \times 100 \times 900$
= 1,08,000.

S176. Ans.(b)
Sol.
–26, +52, –78, +104, –130
So, 640 – 130 = 510

S177. Ans.(e)
Sol. Pattern is —
+25, +50, +100, +200, +400
So, 402+400=802

S178. Ans.(a)
Sol.
Pattern is —
$+(5^2-1), +(7^2+1), +(9^2-1), +(11^2+1), +(13^2-1)$
So,
$293+(13^2-1)=461$

S179. Ans.(d)
Sol.
Pattern is —
÷5, ×6, ÷5, ×6, ÷5
So, 50.4 ÷ 5 = 10.08

S180. Ans.(b)
Sol.
×2.5, ×1.5, ×2.5, ×1.5, ×2.5
So, 337.5 × 2.5 = 843.75

S181. Ans.(c)
Sol.
Marked price of C in 2018 $= \frac{19000}{100-24} \times 100 = 25000.$
Cost price of C in 2018 $= \frac{25000}{5} \times 3 = 15000$
Required Difference$= 6000 - 4000 = 2000$

S182. Ans.(d)
Sol.
Required average $= \frac{16000+25000+15000+22000}{4} = 19500\ Rs.$

S183. Ans.(c)
Sol.
Required ratio $= \frac{19000}{25000} = 19:25$

S184. Ans.(d)
Sol.
Sum of selling price of all 3 type of refrigerators in year 2016 = (16000+22000+26000) = 64000
Sum of selling price of all 3 type of refrigerators in year 2017 = (14000+25000+32000) = 71000
Sum of selling price of all 3 type of refrigerators in year 2018 = (15000+19000+29000) = 63000
Sum of selling price of all 3 type of refrigerators in year 2019 = (17000+22000+28000) = 67000
So, in Year 2018 it is lowest.

S185. Ans.(b)
Sol.
Required % $= \frac{15000}{17000} \times 100 = 88.23\% \approx 88\%$ (approx.)

S186. Ans.(d)
Sol.
I . $x^2 - 6x - 8x + 48 = 0$
$x(x-6) - 8(x-6) = 0$
$(x-8)(x-6) = 0$
$x = 6, 8$
II . $y^2 - 9y - 8y + 72 = 0$
$y(y-9) - 8(y-9) = 0$
$(y-9)(y-8) = 0$
$y = 9, 8$
$x \leq y$

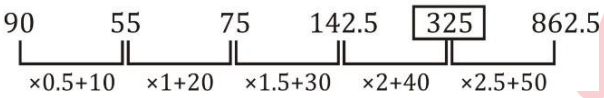
S187. Ans.(b)
Sol.
I . $x^2 + 7x + 6x + 42 = 0$
$x(x+7) + 6(x+7) = 0$
$(x+6)(x+7) = 0$
$x = -6, -7$
II. $y^2 + 8y + 7y + 56 = 0$
$y(y+8) + 7(y+8) = 0$
$(y+8)(y+7) = 0$
$y = -8, -7$
$x \geq y$

S188. Ans.(c)
Sol.
I . $x^2 + 6x + 2x + 12 = 0$
$x(x+6) + 2(x+6) = 0$
$(x+2)(x+6) = 0$
$x = -2, -6$
II. $6y^2 + 9y + 4y + 6 = 0$
$3y(2y+3) + 2(2y+3) = 0$
$(2y+3)(3y+2) = 0$
$y = -\frac{3}{2}, -\frac{2}{3}$
$x < y$

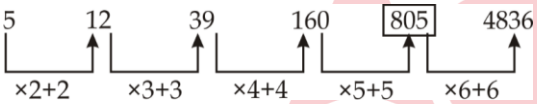
S189. Ans.(a)
Sol.
I . $2x^2 + 6x + 3x + 9 = 0$
$2x(x + 3) + 3(x + 3) = 0$
$(x + 3)(2x + 3) = 0$
$x = -3, -\frac{3}{2}$
II . $y^2 + 16y + 12y + 192 = 0$
$y(y + 16) + 12(y + 16) = 0$
$(y + 16)(y + 12) = 0$
$y = -16, -12$
$x > y$

S190. Ans.(a)
Sol.
I. $x^2 - 9x + 20 = 0$
$x^2 - 5x - 4x + 20 = 0$
$x(x - 5) - 4(x - 5) = 0$
$(x - 4)(x - 5) = 0$
$x = 4, 5$
II. $y^2 + 3y + 3y + 9 = 0$
$y(y + 3) + 3(y + 3) = 0$
$(y + 3)(y + 3) = 0$
$y = -3, -3$
$x > y$

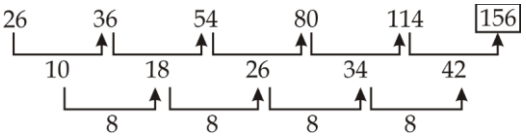
S191. Ans.(b)
Sol.



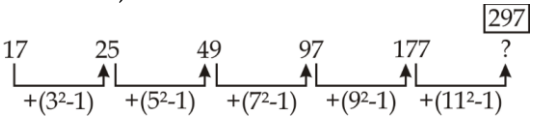
S192. Ans.(d)
Sol.



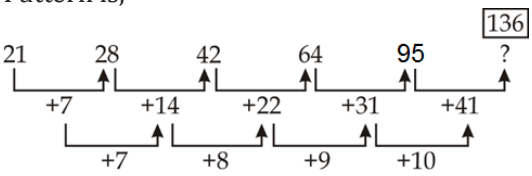
S193. Ans.(e)
Sol.



S194. Ans.(a)
Sol.
Pattern is,



S195. Ans.(d)
Sol.
Pattern is,



S196. Ans.(e)
Sol. Price of a one kg sugar $= 84 \times \frac{11}{21} = Rs\ 44$
Price of one kg of salt $= 840 \times \frac{10}{21} = Rs40$
Required difference = $(20 \times 44 - 15 \times 40)$
$= 880 - 600$
$= Rs.\ 280$

S197. Ans.(a)
Sol. Price of one kg of tea $= \frac{900}{18} = Rs50$
Price of one kg of rice $= \frac{1500}{30} = Rs50$
Required % $= \frac{50-50}{50} \times 100 = 0\%$

S198. Ans.(d)
Sol. Required ratio $= \frac{63\times12}{42\times25} = \frac{18}{25}$

S199. Ans.(b)
Required%$= \frac{20+15}{30+12} \times 100 = 83\frac{1}{3}\%$

S200. Ans.(b)
Sol. Required sum = $(56 \times 15) + (32 \times 30) + (40 \times 25)$
$= 2800$ Rs.