41. (c); Offline contestant in village A = $\frac{350}{56} \times 44 = 275$
Online contestant who complete the survey = 350 – 61 = 289
Offline contestant who complete the survey = 275 – 61 = 214
∴ Required % = $\frac{289-214}{214} \times 100 \approx 35\%$

42. (a); Total no. of contestant from village C who complete the survey
$= \left[465 + \left(\frac{465}{60} \times 40\right)\right] - 108 \approx 667$
Total no. of contestant from village B who complete the survey
$= \left[560 + \left(\frac{560}{35} \times 65\right)\right] - 92 = 1508$
∴ Required number = 1508 – 667 = 841

43. (c); Online contestant who didn't completed the survey
$= \frac{8}{19} \times 190 = 80$
Offline contestant who didn't completed the survey 8
$= \frac{11}{19} \times 190 = 110$
∴ Males in Online contestant who completed the survey
$= \frac{65}{100} \times (480 - 80) = 260$
and
females in offline contestants who completed the survey
$= \frac{60}{100} \times \left(\frac{480}{40} \times 60 - 110\right) = 366$
∴ Required difference = (480 – 80 –260) ~ (720 –110–366)
= 140 ~ 244 =104

44. (d); Offline contestants of village C = $\frac{465}{60} \times 40 = 310$
Offline contestants of village A = $\frac{350}{56} \times 44 = 275$
∴ Required difference = 35

45. (a); Required sum
$= \frac{350}{56} \times 12 + \frac{560}{35} \times 30 + \frac{465}{60} \times 20 + \frac{480}{40} \times 20$
= 75 + 480 + 155 + 240 = 950

46. (d); Number of said contestants from village C
$= \frac{465}{60} \times 100 - 108$
= 667
and number of said contents from village D
$\frac{480}{40} \times 100 = 1200$
∴ Required percentage = $\frac{667}{1200} \times 100$
= 56%

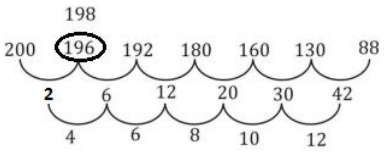
47. (b);
(A's profit) : (B's profit) : (c's profit)
$= 600 \times 12$: 500×4 : $5x \times 8$
= 180 : 50 : x
∴ C's profit = $\frac{x}{230 + x} \times 24000$
$\Rightarrow \frac{x}{230 + x} \times 24000 = 5600$
$\Rightarrow$ 30x = 1610 + 7x
$\Rightarrow$ x = 70%

48. (a); Length of platform = 21 × 19 – 216 = 183 m
Let n boxes are added
216 + 183 + 21n = 21 × 26
$\Rightarrow$ 21n = 147
$\Rightarrow$ n = 7

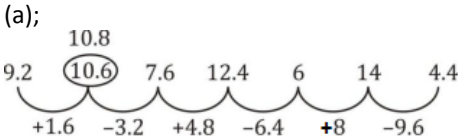
49. (d); B will complete the work alone in
$= \frac{3}{4} \times 36$
= 27 days
A — 36 3
108
B — 27 4
Let total units of work = 108
No. of units done by A in 1 day = 3
No. of units done by B in 1 day = 4
Total work done in 2 days = 7 units
Work done in 30 days = 7 × 15 = 105 units
Remaining work will be done by A in $\frac{108-105}{3}$ = 1 day.
∴ Total days taken = 31 days

50. (c); 12% of the salary is added as PPF.
Remaining Part = 100 - 12 = 88%
Amount spent on clothes = $\frac{3}{8}$of 88% = 33%
Difference between PPF and cloth expanses = 33 - 12 = 21% of salary = 10500
Total salary = 50000
Other expanses = House Rent expanses + 1500
House Rent expanses + Other expanses = (100 - 33 - 12)% of salary
= 55% of salary = 27500
House Rent expanses + House Rent expanses + 1500 = 27500
2 × House Rent expanses = 27500 - 1500 = 26000
House Rent expanses = 13000

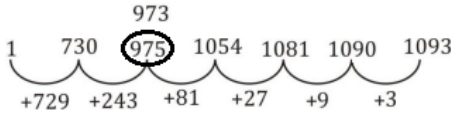
51. (b)



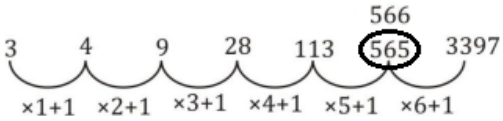
52. (a);



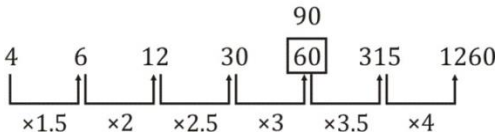
53. (b)



54. (c)



55. (c)



56. (b); Players from Club 'D' who play either of Cricket or Football
$= 2400 \times \frac{12}{100} + 3200 \times \frac{20}{100}$
$= 288 + 640 = 928$
Players of football from both club 'C' and 'E'
$= 3200 \times \frac{(13+21)}{100} = 1088$
∴ Required diff = 1088 – 928 = 160

57. (c); Male players from club 'E' who play either of Cricket or Football
$= \left[2400 \times \frac{24}{100} + 3200 \times \frac{21}{100}\right] \times \frac{9}{16}$
$= [576 + 672] \times \frac{9}{16}$
$= 1248 \times \frac{9}{16} = 702$
Players from club 'F' who playing football
$= 3200 \times \frac{5}{100} = 160$
Required percentage= $\frac{702}{160} \times 100 = 438\frac{3}{4}\%$

58. (a); Female players of Cricket from club 'E'
$= 2400 \times \frac{24}{100} \times \frac{7}{12} = 336$
Female players of Football from club 'C'
$= 3200 \times \frac{13}{100} \times \frac{6}{13} = 192$
Required sum = 336 + 192 = 528

59. (d); Players of club D and B who play football
$= 3200 \times \frac{36}{100} = 1152$
Players of club D and F who playing Cricket
$= 2400 \times \frac{23}{100} = 552$
$\therefore \text{ Required } \% = \frac{(1152-552)}{552} \times 100 \approx 108.7\%$
=109%

60. (b); Players who play Cricket from both club A and C
$= 2400 \times \frac{33}{100} = 792$
Players who playing Football from Club B, D and F together
$= 3200 \times \frac{41}{100} = 1312$
∴ Required difference = 1312 – 792 = 520

61. (d); Probability of drawing one green ball =
$\frac{x}{12+x} = \frac{2}{5}$
⇒ x = 8
∴ Required probability = $\frac{{}^5C_2}{{}^{15}C_2}$
$= \frac{5\times4}{15\times14} = \frac{2}{21}$

62. (a); A + B = 41 …(i)
C -1 = A + 2
C = A + 3
And
A + 4 = B - 1
⇒ B = A + 5 …(ii)
From (i) + (ii)
A = 18 years
B = 18 + 5 = 23 years
C = 18 + 3 = 21 years
$\frac{A}{D} = \frac{3}{4}$
D = $\frac{4}{3} \times 18$ = 24 years
∴ Required difference = 24 – 21 = 3 years

63. (a); Radius of cylinder = side of equilateral Δ
$\therefore \frac{\sqrt{3}}{4}a^2 = 16\sqrt{3}$, where a = sides of Δ
∴ $a^2 = 64$
⇒ a = 8 cm
And, height of cylinder = 3 × 8 = 24 cm
∴ Volume of cylinder = $\pi r^2 h$
$= \pi \times 8^2 \times 24$
$= 1536\ \pi\ cm^3$

64. (b); Compound interest earned in 2 years
$= 8000\left[\left(1+\frac{20}{100}\right)^2\right] - 8000$
= 3520
Let amount invested in another scheme is Rs. P.
3520 = 500% of $\frac{P \times 8 \times 4}{100}$
$\Rightarrow P = \frac{3520 \times 100}{32 \times 5}$
⇒ P = 2200
∴ Total investment = 8000 + 2200 = 10,200

65. (a); In 1000 ml of mixture,
Alcohol = 700 ml
Water = 300 ml
Let x ml of alcohol is mixed.
According to question
$\frac{300}{1000+x} \times 100 = 15$
$1000 + x = 2000 \Rightarrow x = 1000$ ml

66. (e); $2\pi r^2 = 616$

$r^2 = \frac{616}{2} \times \frac{7}{22}$

$r^2 = 98$

$\therefore$ Volume $= \frac{2}{3}\pi r^3$

$= \frac{2}{3} \times \frac{22}{7} \times 98 \times 7\sqrt{2}$ = 2032.69 cm^3

67. (b); : A = 6 : 11

A) $11x - 6x = 25$

So we can find out ratio of their age 5 year ago.

B) $(11x + 5) - (6x + 5) = 25$

C) $11x + 6x = 85$

68. (e); ost price per unit is not given.

69. (e); $8M + 6W = \frac{1}{21}$

$1.5(8M + 6W) = 1.5 \times \frac{1}{21}$

$12M + 9W = \frac{1}{14}$

Work will be completed in 14 days. No information is required.

70. (d); Question can't be answered because direction of movement of the trains are not given.

71. (c); Invalid voter of village C in 2005

$= 4000 \times \frac{36}{64} = 2250$

Valid voter of village C in 2001

$= 4000 \times \frac{19}{25} = 3040$

Now, invalid voter of village C in 2001

$3040 \times \frac{24}{76} = 960$

$\therefore$ Required diff. = 2250 – 960 = 1290

72. (a); Total valid votes of village A in 2005

$= 2500 \times \frac{100}{20} \times \frac{80}{100} = 10{,}000$

Total valid votes excluding Nota in village A in 2005

$= 10{,}000 \times \frac{90}{100} = 9{,}000$

$\therefore$ According to que.

x + (x + 200) = 9000

$\Rightarrow$ x = 4400

Required no. of votes of loosing candidates = 4400

73. (b); Let the total voters in 2005 are x.

Total voters in 2001

$= \left(1 + \frac{3}{23}\right)x = \frac{26}{23}x$

$\therefore$ Required ratio $= \frac{x \times \frac{26}{23} \times \frac{25}{100}}{x \times \frac{35}{100}} = \frac{130}{161}$

74. (d); Total invalid male of village E in 2001

= 2000 – 1600 = 400

Total valid voters in 2001

$= 1600 \times \frac{100}{64} = 2500$

Total voters in 2001 $= 2500 \times \frac{100}{80} = 3125$

$\therefore$ Required % $= \frac{400}{3125} \times 100 = 12.8\%$

75. (c); Let total voters of village B in 2001 = x

& Total voters of village D in 2005 = y

$\therefore \frac{x \times \frac{75}{100}}{y \times \frac{30}{100}} = \frac{16}{3}$

$\frac{x}{y} = \frac{32}{15}$

$\therefore$ Required % $= \frac{17}{32} \times 100 = 53\frac{1}{8}\%$

Sol. (76-80): Let number of chairs, tables and wardrobes sold by A in August be 42x, 36x and 23x. Also, let chairs sold by A in August, September and October be 14y, 23y and 27y respectively.

$\therefore$ 42x = 14y $\Rightarrow$ y = 3x

and, 23x = 23y – 230

$\Rightarrow$ x = 5 and y = 15

Now,

Chairs sold by B in September = 665 – 345 = 320

Chairs sold by B in August = 320

Tables sold by B in September = Chairs sold by A in Aug = 210

$\therefore$ Table sold by A in September = 400 – 210 = 190

Wardrobes sold by B in September = wardrobes sold by A in Aug = 115

$\therefore$ Wardrobes sold by A in September = 210 – 115 = 95

Chairs sold by B in October = 1025 – 320 – 320 = 385

Tables sold by A in October = (1025 – 480) – (180 + 190) = 175

Tables sold by B in August = $\frac{11}{12} \times 180 = 165$

Tables sold by B in October = $\frac{38}{35} \times 175 = 190$

Wardrobes sold by B in August = 1075 – (210 + 320 + 180 + 165 + 115) = 85

Let wardrobes sold by A in October be a and that by B be b in October

$\therefore$ a = b – 35 and a + b = 205

$\Rightarrow$ a = 85 and b = 120

Months	Chair		Table		Wardrobe	
	A	B	A	B	A	B
Aug	210	320	180	165	115	85
Sep	345	320	190	210	95	115
Oct	405	385	175	190	85	120

76. (c); Total chairs sold by B in September and October = 320 + 385 = 705

77. (a); Required percentage

$= \frac{175 - 125}{125} \times 100 = 40\%$

78. (d); Asked difference = 320 – 210 = 110

79. (b); Required ratio = $\frac{180}{210} = \frac{6}{7}$

80. (e); Wardrobes sold by B in Oct = 125