ANSWER SET - 02

1.(4) 2.(1) 3.(3) 4.(5) 5.(4)
6.(1) 7.(1) 8.(4) 9.(3) 10.(2)
11.(4) 12.(1) 13.(5) 14.(2) 15.(5)
16.(2) 17.(1) 18.(5) 19.(3) 20.(4)
21.(3) 22.(2) 23.(1) 24.(5) 25.(2)
26.(2) 27.(1) 28.(1) 29.(3) 30.(4)
31.(3) 32.(5) 33.(2) 34.(5) 35.(4)
36.(5) 37.(2) 38.(1) 39.(4) 40.(5)
41.(2) 42.(4) 43.(1) 44.(3) 45.(4)
46.(3) 47.(5) 48.(2) 49.(1) 50.(3)
51.(3) 52.(5) 53.(3) 54.(1) 55.(3)
56.(4) 57.(3) 58.(4) 59.(3) 60.(1)
61.(3) 62.(1) 63.(4) 64.(2) 65.(5)
66.(3) 67.(3) 68.(3) 69.(5) 70.(4)
71.(1) 72.(3) 73.(2) 74.(4) 75.(5)
76.(2) 77.(2) 78.(3) 79.(1) 80.(2)
81.(3) 82.(3) 83.(2) 84.(2) 85.(4)
86.(2) 87.(3) 88.(1) 89.(5) 90.(4)
91.(2) 92.(3) 93.(1) 94.(4) 95.(3)
96.(1) 97.(4) 98.(3) 99.(2) 100.(2)

EXPLANATION - 02

1. (4) Replace 'into' with 'in'.
2. (1) Replace 'for' with 'of'.
3. (3) Replace 'much' with 'so'.
4. (5)
5. (4) Add 'so' after do.
31. (3) **I.** $42p^2 + 53p + 15 = 0$
or, $42p^2 + 18p + 35p + 15 = 0$
or, $6p(7p + 3) + 5(7p + 3) = 0$
or, $(6p + 5)(7p + 3) = 0$
$\therefore p = -\frac{5}{6}$ or $\frac{-3}{7}$
II. $42q^2 - 53q + 15 = 0$
or, $42q^2 - 18q - 35q + 15 = 0$
or, $6q(7q - 3) - 5(7q - 3) = 0$
or, $(6q - 5)(7q - 3) = 0$
or, $q = \frac{5}{6}$ or $\frac{3}{7}$
Hence, q > p.
32. (5) **I.** $p^2 + 24p + 143 = 0$
or, $p^2 + 11p + 13p + 143 = 0$
or, $p(p + 11) + 13(p + 11) = 0$
or, $(p + 13)(p + 11) = 0$
$\therefore p = -11$ or -13
II. $q^2 + 6q - 55 = 0$
or, $q^2 - 5q + 11q - 55 = 0$
or, $q(q - 5) + 11(q - 5) = 0$
or, $(q + 11)(q - 5) = 0$
$\therefore q = -11$ or 5
Hence $q \geq p$
33. (2); **I.** $p^2 - 14p + 48 = 0$
or, $p^2 - 8p - 6p + 48 = 0$
or, $p(p - 8) - 6(p - 8) = 0$
or, $(p - 6)(p - 8) = 0$
$\therefore p = 6$ or 8
II. $q^2 + 16q + 63 = 0$
or, $q^2 + 7q + 9q + 63 = 0$
or, $q(q + 7) + 9(q + 7) = 0$
or, $(q + 9)(q + 7) = 0$
$\therefore q = -9$ or -7
Hence p > q.
34. (5) **I.** $6p^2 - 41p + 63 = 0$
or, $6p^2 - 27p - 14p + 63 = 0$
or, $3p(2p - 9) - 7(2p - 9) = 0$
or, $(3p - 7)(2p - 9) = 0$
$\therefore p = \frac{7}{3}$ or $\frac{9}{2}$
II. $6q^2 - 59q + 143 = 0$
or, $6q^2 - 33q - 26q + 143 = 0$
or, $3q(2q - 11) - 13(2q - 11) = 0$
or, $(3q - 13)(2q - 11) = 0$
$\therefore q = \frac{13}{3}$ or $\frac{11}{2}$
We can't get any specific relationship between p and q.
35. (4) **I.** $p^2 - 14p + 45 = 0$
or, $p^2 - 5p - 9p + 45 = 0$
or, $p(p - 5) - 9(p - 5) = 0$
or, $(p - 9)(p - 5) = 0$
or, p = 9 or 5
II. $q^2 - 8q + 15 = 0$
or, $q^2 - 5q - 3q + 15 = 0$
or, $q(q - 5) - 3(q - 5) = 0$
or, $(q - 3)(q - 5) = 0$
$\therefore q = 3$ or 5
Hence $p \geq q$.
36. (5) $11^2 - 13 = 120$
$12^2 - 23 = 136$
$13^2 - 33 = 142$
$14^2 - 43 = 132$
$15^2 - 53 = 100$
$16^2 - 63 = 40$
Hence, the wrong number in the series is 60.
37. (2) $5 \times 4 - 10 = 10$
$10 \times 6 + 20 = 80$
$80 \times 8 - 30 = 610$
$610 \times 10 + 40 = 6140$
$6140 \times 12 - 50 = 73630$
Hence, the wrong number in the series is 20.
38. (1) $117448 \div 8 - 2 = 14679$
$14679 \div 7 - 3 = 2094$
$2094 \div 6 - 4 = 345$
$345 \div 5 - 5 = 64$
$64 \div 4 - 6 = 10$
Hence the wrong number in the series is 117484.
39. (4) $6 + 1^2 + (8 \times 1) = 15$
$15 + 2^2 + (7 \times 2) = 33$
$33 + 3^2 + (6 \times 3) = 60$
$60 + 4^2 + (5 \times 4) = 96$
$96 + 5^2 + (4 \times 5) = 141$
Hence the wrong number in the series is 59.
40. (5) $200 \times 1 + 8 = 208$
$208 \times 1.5 + 9 = 321$
$321 \times 2 + 10 = 652$
$652 \times 2.5 + 11 = 1641$
$1641 \times 3 + 12 = 4935$
There is no wrong number in the series.
41. (2) The percentage increase in sales in the year 2014 as compared to the year 2009 of different companies are as follows:

$$\text{Dell} = \frac{45 - 30}{30} \times 100 = 50\%$$

$$\text{HP} = \frac{50 - 25}{25} \times 100 = 100\%$$

$$\text{Sony} = \frac{35 - 22.5}{22.5} \times 100 = 55.56\%$$

$$\text{Samsung} = \frac{32.5 - 20}{20} \times 100 = 62.5\%$$

Hence maximum is of HP.
42. (4) Required percentage increase

$$= \frac{(45 + 50 + 35 + 32.5) - (30 + 25 + 22.5 + 20)}{30 + 25 + 22.5 + 20} \times 100$$

$$= \frac{162.5 - 97.5}{97.5} \times 100 \approx 66.67\%$$

43. (1) Average sales (in thousands) of all the companies together in the years are as follows:

$$2009 = \frac{30 + 25 + 22.5 + 20}{4} = 24.375$$

$$2010 = \frac{45 + 30 + 25 + 35}{4} = 33.75$$

$$2011 = \frac{25 + 15 + 32.5 + 35}{4} = 26.875$$

$$2012 = \frac{37.5 + 45 + 27.5 + 15}{4} = 31.25$$

$$2013 = \frac{35 + 42.5 + 25 + 20}{4} = 30.625$$

$$2014 = \frac{45 + 50 + 35 + 32.5}{4} = 40.625$$

44. (3) Total sales of Sony (in thousand)
= 22.5 + 25 + 32.5 + 27.5 + 25 + 35 = 167.5
Total sales of Dell (in thousand)
= 30 + 45 + 25 + 37.5 + 35 + 45 = 217.5
∴ Required percentage less

$$= \frac{217.5 - 167.5}{217.5} \times 100 \approx 23\%$$

45. (4) Average sales of laptops (in thousand) different companies in all the years together

$$\text{Dell} = \frac{30 + 45 + 25 + 37.5 + 35 + 45}{6}$$

$$= 36.25$$

$$\text{HP} = \frac{25 + 30 + 15 + 45 + 42.5 + 50}{6}$$

$$= 34.58$$

$$\text{Sony} = \frac{22.5 + 25 + 32.5 + 27.5 + 25 + 30}{6}$$

$$= 27.92$$

$$\text{Samsung} = \frac{20 + 30 + 35 + 15 + 20 + 32.5}{6} = 26.25$$

Hence, second highest is in HP
46. (3) Capacity of container

$$= \frac{8}{1 - \left(\frac{121}{144}\right)^{1/2}} = \frac{8}{1 - \frac{11}{12}}$$

$= 8 \times 12 = 96$ litre
47. (5) Desired sum of numbers are 2, 3, 4, 5, 6, 7
n (E) = {(1,1) ; (1,2); (1,3); (1,4); (1,5); (1,6); (2,1); (2,2); (2,3); (2,4); (2,5); (3,1); (3,2); (3,3); (3,4); (4,1);

(4,2); (4,3); (5,1); (5,2), (6,1)}
= 6 + 5 + 4 + 3 + 2 + 1 = 21
And n(s) = 36

$\therefore$ Required probability $= \frac{21}{36} = \frac{7}{12}$

48. (2) Boy's share $= x\left[1-\left(\frac{x+y}{xy}\right)d\right]$

Where X = ₹4001
x = 6, y = 8, d = 3
$\therefore$ Boy's share

$= 400\left[1-\left(\frac{6+8}{6\times 8}\right)\times 3\right]$

$= 400\left[1-\frac{14}{6\times 8}\times 2\right] = 400\left[1-\frac{7}{8}\right]$

$= 400\times\frac{1}{8} = ₹50$

49. (1) Compound interest = 200000

$\left(1+\frac{8}{200}\right)^4 - 2{,}00{,}000$

$= 200000\left(\frac{26}{25}\right)^4 - 2{,}00{,}000$

= 233971.712 – 200000 = ₹33971.712

50. (3) Side $= 9\times\frac{2}{\sqrt{3}} = 6\sqrt{3}$

$\therefore$ Area

$= \frac{\sqrt{3}}{4}\times 6\sqrt{3}\times 6\sqrt{}\times\left(\sqrt{3}=1.732\right)$

= 46.764 cm^2

51. (3)

	Total	Total
A	8100	5760
B	5940	3520
C	4320	2240
D	9180	6720
E	4860	4480
F	9720	3520
G	11880	4160

= 4320 + 4860 : 8100 +9720
= 9180 : 17820
= 17 : 33

52. (5) A → 71.11% B → 59.26%
C → 51.85% D → 73.20%
E → 92.18% F → 36.21%
G → 35.02%

53. (3) Difference = 5940 – 4860 = 1080

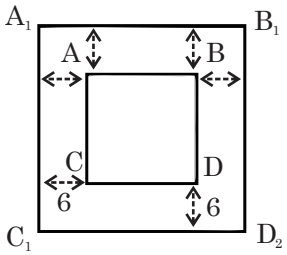
54. (1) $\frac{12800}{17280}\times 100 = 74.07\%$

55. (3) 8960 : 11880 = 224 : 297

56. (4) Total = 28 $\therefore$ Boys = 20, Girls = 8
$n(S) = {}^{28}C_3 = 3276$
$n(E) = {}^{20}C_1\times{}^{8}C_2 = 20\times 28 = 560$

$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{560}{3276} = \frac{140}{819} = \frac{20}{117}$

57. (3) Let the side of the room be x metres.



Area of the verandah = 2×{(x + 12) × 6 + 6 × x} = 696
or, 12{(x + 12) + x} = 696
$\therefore$ 2x + 12 = 58

$\therefore 2x = \frac{58-12}{2} = \frac{46}{2} = 23$ m

$\therefore$ Area of the square = x2 = (23)2 = 529 sqm

58. (4) We assume the six particular persons as one. So, total number of persons is 18 – 6 + 1 = 13 and they can sit around a circular table in 12! ways. Six particular persons can sit in 6! ways among themselves.
$\therefore$ Total number of ways = 12! × 6!

59. (3) Let the amount be x.
$\therefore$ x × 1.64 – x × 1.45 = 14.63
0.19x = 14.63

$\therefore x = \frac{14.63}{0.19} = 77$

60. (1) Let the amount deposited at 17% be x.

$\therefore \frac{x\times 17\times 2}{100} + \frac{(7200-x)\times 11\times 2}{100}$
= 19080
or, 34x + 1584000 – 22x = 1908000
or, 12x = 1908000 – 1584000 = 324000

$\therefore x = \frac{324000}{12} = 27000$

(61–65):

Number of girls $= \frac{11}{17}\times 5100$
= 3300

Number of boys $= \frac{6}{17}\times 5100 =$ 1800

	Boys	Girls
Only Drama	20 x 18 =	27 x 33 =
Only Dance	14 x 18 =	2 x 252 = 504
Only Singing	828	1335 - 828 =
Drama +Dance +	1800/5 =	1398

61. (3) Total number students enrolled in only Drama
= 360 + 891 = 1251

62. (1) Required answer = 1398

63. (4) Required percentage

$= \frac{828}{507}\times 100 \approx 163\%$

64. (2) Required ratio = 360 : 891 = 40 : 99

65. (5) Required number of boys = 252 + 360 = 612

66. (3) All cars are bottles (A) + All bottles are windows (A) = A + A = A = All cars are windows. Hence, conclusion I follows. But conclusion II does not follow because there is not negative statement.
Again, All dolls are windows → conversion → Some windows are dolls. Now, All cars are windows (A) + Some windows are dolls (I) = A + I = No conclusion III follows.

67. (3) Some players are balls (I) + All balls are circles (A) = I + A = I = Some players are circles. It means All circles being players is a possibility. Hence, conclusion III follows.
Again, Some tigers are balls (I) + All balls are circles (A) = I + A = I = Some tiger are circles → implication → Some circles are tigers. Hence, conclusion I follows. But conclusion II does not follow because there is no negative statement.

68. (3) Some surgeons are editors, it means All editors being surgeons is a possibility. Hence conclusion II follows.
Again, Some chemists are surgeons (I) + Some surgeons are editors (I) = I + I = No conclusion. Hence, conclusion III does not follow.
Now, Some surgeons are editors (I) + Some editors are translators (I) = I + I = No conclusion. Hence, conclusion I does not follow.

69. (5) All mangoes are apples (A) + No apple is a fruit (E) = A + E = E = No mango is a fruit → conversion → No fruit is a mango. Hence, conclusion II follows.
Again, All branches are fruits (A) + No fruits is a mangoes (E) = A + E = E = No branches is a mangoes → conversion → No mango is a branch. Hence, conclusion III follows. But I does not follow.

70. (4) Some actors are managers (I) + No managers is aworker (E) = I + E = O = Some actors are not workers. It means All workers being actors is a possibility.
Hence, conclusion III follows. But I does not follows. Again, No manager is a worker → conversion → Now worker is a manager.
Now, All employees are workers (A) + No worker is a managers = A + E = E = No employee is a managers → conversion → No manager is a employee (E) So, Some actors are managers (I) + No manager is a employee (E) = I + E = O = Some

actors are not employees. Thus, II does not follow.

(71–75):

$P@Q \rightarrow P \leq Q$

$P©Q \rightarrow P \geq Q$

$P\%Q \rightarrow P > Q$

$P\#Q \rightarrow P < Q$

$P + Q \rightarrow P = Q$

71. (1) Given statements:
$C < D < N > X$ ..... (i)
$N < U = O > A$ ..... (ii)
Combining (i) and (ii)

$C < D \leq N \leq U = O > A$

Comparing C and O
$C < O \Rightarrow C \# O$
thus I is true

$A < O = U \geq N > X$

Comparing X and O
$X < O \Rightarrow X @ O$
thus II is not true.

72. (3) Given statements:
$T > S = J < D$ ..... (i)
$S > Q = F > B$ ..... (ii)
Combining (i) and (ii)

$B < F = Q \leq S = J \leq D$

Comparing D and F
$D > F \Rightarrow D © F$
thus I is not true
$D > F \Rightarrow D © F$
thus, II is not true
Hence, either I or II is true.

73. (2) Given statements:
$V < R = W$ ..... (i)
$K < E < V$..... (ii)
$E > N = Y$ .....(iii)
Combining (ii) and (iii)

$K \leq E \geq N - Y$

We can't compare K and Y
Hence I is not true.
Again, combining (i), (ii) and (iii)

$Y = N \leq E \leq V \leq R = W$

Comparing W and Y
$W > Y \Rightarrow W © Y$
Thus, II is true

74. (4) Given statements:
$H > P = T$ ..... (i)
$P < S < L$ .....(ii)
$T > J = U$ .....(iii)
Combining (i), (ii) and (iii)

$U - J \leq T - P \leq S < L$

Comparing U and S
$U < S \Rightarrow U @ S$
thus I is not true
Comparing L and U
$L > U \Rightarrow L \% U$
Thus, II is also not true.

75. (5) Given statements:
$F < D = N$ ..... (i)
$O > T = S > J$ ..... (ii)
$D < J > R$ ..... (iii)
Combining (i) (ii) and (iii)
We get,

$O \geq T - S > J \geq D \geq F$

Comparing O and F
$O > F \Rightarrow O \% F$
Thus I is true

$O \geq T = S > J > R$

Comparing O and R
$O > R \Rightarrow O \% R$
Thus, II is true

(76–80):

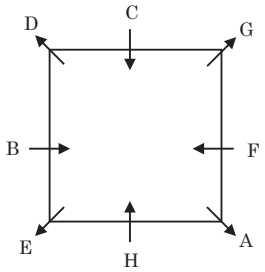
Person	Profession	Floor
B	Doctor	6
C/F	Engineer	5
A	Journalist	4
D	Lawyer	3
E	Architect	2
F/C	Teacher	1

76. (2) If F stays on floor 1, C will stay on floor 5 and then he will be the Engineer by profession.

77. (2) 78. (3) 79. (1)

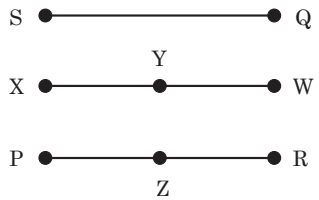
80. (2) According to the given condition, the Journalist must stay below the floor of the Engineer. So, if the Journalist stays on floor 2, the condition is not violated. Therefore, the Engineer keeps on staying on floor 5, ie his original position.

(81–85):



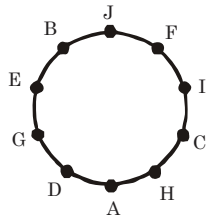
81. (3)
82. (3)
83. (2)
84. (2) Only G retains his original position.
85. (4) C sits exactly between D and G.

(86–90):



86.(2)87.(3) 88. (1) 89. (5) 90. (4)

(91–95):



91. (2) 92. (3) 93. (1)
94. (4) In others the second person is sitting on the immediate right of the first.
95. (3)

(96–100):

jump and run away → tm jd qm ni ...(i)
don't run too fast → ki qm lt sa ...(ii)
watch fast and furious → lt kb jd tec ...(iii)
you jump too fast →sa zn ni lt ...(iv)
From (i) and (ii), run →qm ...(v)
From (ii) and (iii) , fast →lt ...(vi)
From (i) and (iii), and → jd ...(vii)
From (i) and (iv), jump →ni ...(viii)
From (i), (v), (vii) and (viii), away → tm ...(ix)
From (ii), (iv) and (vi), too → sa ...(x)
From (ii), (v), (vi) and (x), don't → ki ...(xi)
From (iv), (vi), (viii) and (x), you → zn ...(xii)
From (iii), (vi) and (vii),
watch/furious → kb/tec ...(xiii)

96.(1)97.(4)98. (3) 99. (2) 100. (2)