

Grand Test – IPP 180916



33.(5) $2x^2 - 3x - 35 = 0$
 $\Rightarrow x = 5, -3.5$
 $y^2 - 7y + 6 = 0$
 $\Rightarrow y = 1, 6$
 \Rightarrow No relation between x and y

34.(4) $6x^2 - 29x + 35 = 0$
 $\Rightarrow x = 2.5, 2.33$
 $2y^2 - 19y + 35 = 0$
 $\Rightarrow y = 7, 2.5$
 $\Rightarrow y \geq x$

35.(2) $12x^2 - 47x + 40 = 0$
 $\Rightarrow x = 2.67, 1.25$
 $4y^2 + 3y - 10 = 0$
 $\Rightarrow y = 1.25, -2$
 $\Rightarrow y \leq x$

36.(1) Let vessel contains 100 L of mixture.
 Change in water concentration will take place only due to the quantity of water added in place of quantity of milk taken out.

$$\text{So, required \%} = \frac{\frac{30}{100} \times 70}{\frac{30}{100}} \times 100 = \frac{21}{30} \times 100 = 70\%$$

37.(1) Total work completed by them in 10 days = $100\% - 41\% = 59\%$

A and B completes 27% work in 3 days.
 When they work alternatively A works for 4 more days and B works for 3 more days.

So, A works for total 7 days and B works for total 6 days
 6 days work of both = $27 \times 2 = 54\%$
 Remaining 5% work is completed by A in one day more

$$\text{So A will complete work in } = \frac{100}{5} = 20 \text{ days.}$$

38.(2) Let marked price = M.P.
 Let cost price = C.P.
 and selling price = S.P.
 According to question
 $CP + SP = MP$
 $CP + \left(MP - \frac{x}{100} \times MP \right) = MP$
 $CP = \frac{x}{100} \times MP$
 and $SP = \left(MP - \frac{x}{100} \times MP \right)$
 So, Profit% = $\frac{\left(MP - \frac{x}{100} \times MP \right) - \frac{x}{100} \times MP}{\frac{x}{100} \times MP} \times 100$
 $\text{Profit\%} = \frac{100 - 2x}{x} \times 100$

39.(1) Let the cost price of a chair be Rs. x
 Then, the cost price of a table
 $= x \times \frac{130}{100} = \frac{13x}{10}$
 According to the question,
 $x + \frac{13x}{10} = 690$
 or, $\frac{10x + 13x}{10} = 690$
 or, $\frac{23x}{10} = 690$
 $\therefore x = \frac{690 \times 10}{23} = \text{Rs. } 300$

Therefore the cost price of a chair = Rs. 300
 \therefore The cost price of a table = $690 - 300 = \text{Rs. } 390$

40.(1) Let the age of son be x years.
 Father's age = y years
 According to the questions,
 $y = 3x + 3$... (i)
 Now, 6 years later
 Son's age = $x + 6$
 \therefore Father's age = $(y + 6) = 2(x + 6) + 12$
 $= 2x + 12 + 12$
 or, $y + 6 = 2x + 24$
 or, $y - 2x = 24 - 6$
 or, $y - 2x = 18$ (ii)
 solving equation (i) and (ii), we get
 $x = 15$
 $\therefore y = 3x + 3 = 48$
 Therefore father's age = 48
 Son's age = 15

41.(3) Required ratio = $\frac{8.55 + 4.95}{8.40 + 5.65} = \frac{13.5}{14.05} = \frac{270}{281}$

42.(4) Percentage decrease = $\frac{9.30 - 6.65}{9.30} \times 100 \approx 28.5\%$

43.(1) Average profit = $\frac{121.95}{18} = 6.775$ lakhs.

44.(3) In the first quarter, the profit earned by traders in lakhs are
 $A = 21.15$ $C = 19.45$ $E = 19.4$
 $B = 17.45$ $D = 21.25$ $F = 23.25$

Thus 2nd maximum profit is earned by trader D.
 Selling = Rs.24,00,000

Therefore cost incurred to him
 $= 2400000 - 870000 = \text{Rs. } 15,30,000$

$$\therefore \text{Profit \%} = \frac{8,70,000}{15,30,000} \times 100 \approx 57\%$$

45.(5) Number of elements in each row
 $=$ H.C.F. of three categories

\therefore Total no. of elements in unit of king C
 $=$ H.C.F. of 480, 400 and 180
 $= 20$

So, total number of rows
 $= \frac{480}{20} + \frac{400}{20} + \frac{180}{20} = 53$

Similarly, total number of rows in unit of king D
 $= \frac{500}{50} + \frac{450}{50} + \frac{200}{50} = 23$

\therefore Required difference = $53 - 23 = 30$

47.(4) Number of soldiers left

$$= 16\frac{2}{3}\% \text{ of } (650 + 420 + 160 \times 4)$$

$$= 285$$

Then, according to question,
 $6x + 5x + (2 \times 4)x = 285$

$$\Rightarrow x = \frac{285}{19} = 15$$

\therefore Required number of soldiers = $15 \times 6 = 90$
 Total soldiers of A = $540 + 350 + 150 \times 4 = 1490$
 Total soldiers of E = $750 + 250 + 250 \times 4 = 2000$

\therefore Required percentage = $\frac{510}{2000} \times 100 = 25.5\%$

48.(2) Required number of elephants

$$= 250 + \frac{200 + 150}{5} = 320.$$


49.(4) Required ratio = $\frac{1}{3} \times (650 + 420 + 160 \times 4)$
 $= \frac{1}{3} \times (620 + 370 + 120)$

$$= \frac{1710}{57}$$

$$= \frac{57}{37}$$

Grand Test – IPP 180916



51.(2) 
 Allahabad 73 km/hr
 Kanpur 47 km/hr
 Time taken by trains to meet each other is t .
 $73 \times t = 47 \times t + 120$
 $26t = 120$
 $t = 0.5$ hour

Distance between Allahabad and Kanpur
 $= (73 + 47) \times 0.5$
 $= 120 \times 0.5$
 $= 60 \text{ km}$

52.(1) $\frac{4}{v+s} = \frac{3}{v-s}$
 $4v - 4s = 3v + 3s$
 $v = 7s$
 $\frac{48}{v+s} + \frac{48}{v-s} = 14$
 $\frac{48}{8s} + \frac{48}{6s} = 14$
 $\frac{6}{s} + \frac{8}{s} = 14$
 $\frac{14}{s} = 14$
 $s = 1 \text{ km/hr}$
 $v = 7 \text{ km/hr}$

53.(3) $R\% = \frac{7896 - 7520}{7520} \times 100$
 $= \frac{376}{7520} \times 100 = \frac{1}{20} \times 100 = 5\%$

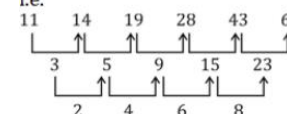
54.(3) $562.38 = P \left(1 + \frac{3}{100}\right) \left(1 + \frac{4}{100}\right) \left(1 + \frac{5}{100}\right)$
 $562.38 = P \times \frac{103}{100} \times \frac{104}{100} \times \frac{105}{100}$
 $P = 562.38 \times \frac{100}{103} \times \frac{100}{104} \times \frac{100}{105}$
 $P = 500$

55.(1) Effective increase in price
 $30 + 5 + \frac{30 \times 5}{100} = 35 + 1.5 = 36.5\%$

56.(2) The series is
 $13 \times 1 + 1 \times 7 = 20,$
 $20 \times 2 + 2 \times 6 = 52,$
 $52 \times 3 + 3 \times 5 = 171,$
 $171 \times 4 + 4 \times 4 = 700$
 $700 \times 5 + 5 \times 3 = 3515, \dots$

57.(3) The series is
 $37 + 24 = 61,$
 $61 + 26 = 87,$
 $87 + 30 = 117,$
 $117 + 32 = 149,$
 $149 + 36 = 185, \dots$

58.(2) The series is
 $\times 1 - 2,$
 $\times 2 - 3,$
 $\times 3 - 4,$
 $\times 4 - 5,$
 $\times 5 - 6, \dots$
 i.e.
 $7 \times 1 - 2 = 5,$
 $5 \times 2 - 3 = 7,$
 $7 \times 3 - 4 = 17,$
 $17 \times 4 - 5 = 63,$
 $63 \times 5 - 6 = 309, \dots$

59.(3) The series is
 $+3, +5, +9, +15, +23$
 i.e.


60.(3) The series is $\times 9 - 15, \times 8 - 14, \times 7 - 13, \times 6 - 12, \dots$
 i.e.
 $12 \times 9 - 15 = 93$
 $93 \times 8 - 14 = 730$
 $730 \times 7 - 13 = 5097$
 $5097 \times 6 - 12 = 30570$
 $30570 \times 5 - 11 = 152839$

61.(2) $35\% \text{ of } 1579 + 29\% \text{ of } 4516 = ? \times 41 + 468 + 773.98 - 199.53$
 or, $? \times 40 + 470 + 770 - 200 \approx \frac{35 \times 1600}{100} + \frac{30 \times 4500}{100}$
 or, $? \times 40 + 1240 - 200 \approx 560 + 1350 = 1910$
 or, $? \times 40 \approx 1910 - 1040 = 870$
 $\therefore ? \approx \frac{870}{40} = 21.75 \approx 20$

62.(3) $(36 + ?) \times 9 = 49.05 \times 19.95 - 24.99 \times 14.12$
 or, $324 + 9 \times ? \approx 50 \times 20 - 25 \times 14$
 or, $9 \times ? \approx 1000 - 350 - 324 = 326$
 $\therefore ? \approx \frac{326}{9} \approx 36$

63.(3) $? = \frac{57 \times 394}{100} - \frac{2.5 \times 996}{100}$
 $\approx 224.58 - 25 = 199.58 \approx 200$

64.(4) $? = 96.996 \times 9.669 + 0.96$
 $\approx 97 \times 9.7 + 1 \approx 941 + 1 = 942 \approx 940$

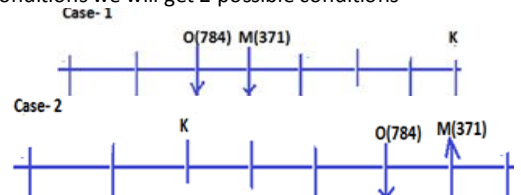
65.(3) $? \approx 26 \times 38 - 309$
 $= 988 - 309 = 679 \approx 680$

66.(3) 67.(4)

68.(4) 69.(5) 70.(3)

71-75. From the condition, O sits 3rd from the extreme end of the row whose rank is a perfect square, hence O can sit either 3rd from left or 3rd from right end of the row and his rank is 784, because this is the only number which is perfect square.

O faces south. M sits immediate left of O, and M rank is 3 digit Armstrong number which is divisible by 7, there is 2 Armstrong number 371 and 153, only 371 is divisible by 7 it means M's rank is 371. (An Armstrong number of three digits is an integer such that the sum of the cubes of its digits is equal to the number itself.) B's rank is an Armstrong number, only 1 Armstrong number (153) is remaining, means B's rank is 153. K sits 4 left of M. N rank is 5 times of 157, hence N rank is 785. From above conditions we will get 2 possible conditions-

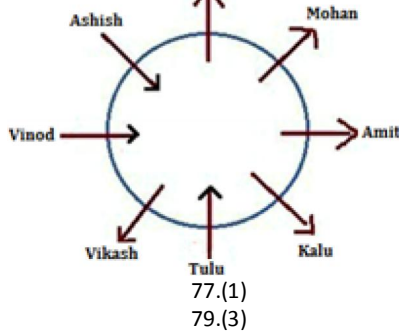
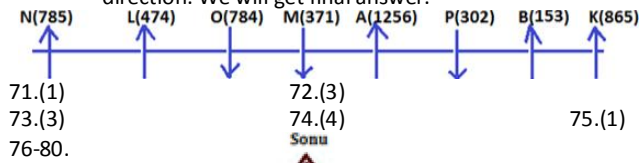


N sits 3rd right of M. P and M are the immediate neighbours of A, from this condition case 2 will be eliminated. Only case -1 will be continued.

From the rest conditions, L sits right of M. A's rank is 1.6 times of N's rank, it means A's rank is 1256. K's rank is average of L and A's rank, there is only one possibility that L's rank is 474 and K's rank is 865. P sits 5th place away from the N, so N faces north direction and P's rank

Grand Test – IPP 180916

will be fixed that is 302. M and P are immediate neighbors of A. B position will be fixed. P faces south direction. We will get final answer.



- 76.(1)
- 78.(4)
- 81-85.
- 80.(4)

It is given that I does not live on first floor and there are three persons live between F and I so there can be two possibilities. It is given that the person who lives on 7th floor likes Dove deodorant.

Case-1

Case-2

Floor	Person	Deodorant
7		Dove
6	F	
5		
4		
3		
2	I	
1		

Floor	Person	Deodorant
7	F	Dove
6		
5		
4		
3	I	
2		
1		

It is given that there is only one person lives between the floor of F and the one who likes secret temptation deodorant. There are only two floors between the floor of K and the floor on which the person who likes secret temptation deodorant lives. The one who likes Nivea deo lives on one of the even-numbered floors above the one who likes Secret temptation deo. E lives immediately above J and does not like Secret temptation deodorant. K does not like Dove deodorant. The one who likes Jovan deo lives on one of the odd-numbered floors below J. The one who likes Nike deodorant lives immediately above K. K does not like Jovan deodorant.

Case-1

Case-2

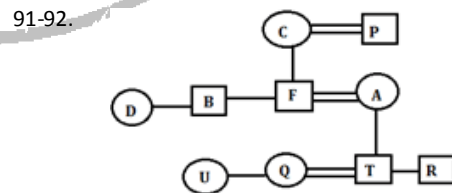
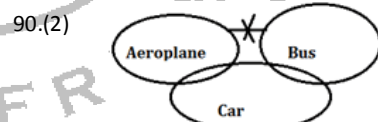
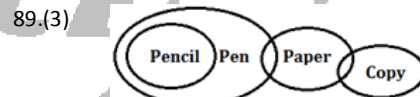
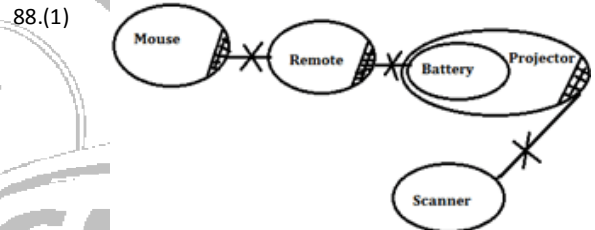
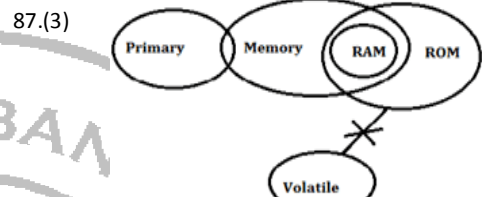
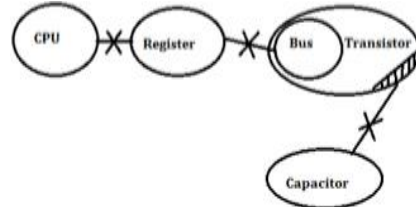
Floor	Person	Deodorant
7		Dove
6	F	Nivea
5	E	
4	J	Secret temptation
3		Jovan
2	I	Nike
1	K	

Floor	Person	Deodorant
7	F	Dove
6	E	Nivea
5	J	Secret temptation
4		
3	I	Nike
2	K	
1		Jovan

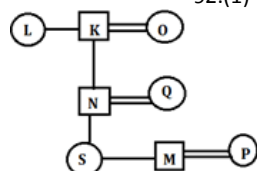
It is given that only one person lives between the one who likes Spinz deodorant and the one who likes Eva deodorant, so Case-1 will be eliminated. H lives on one of the floors above G. H does not like Spinz deodorant so the final arrangement is-

Floor	Person	Drink
7	F	Dove
6	E	Nivea
5	J	Secret temptation
4	H	Eva
3	I	Nike
2	K	Spinz
1	G	Jovan

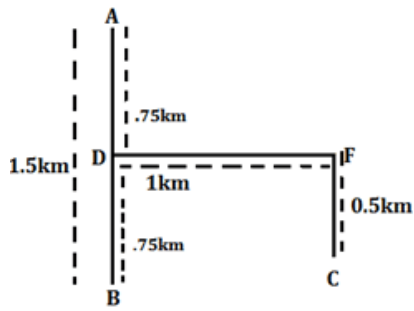
- 81.(2)
- 83.(4)
- 86.(1)
- 82.(1)
- 84.(3)
- 85.(4)



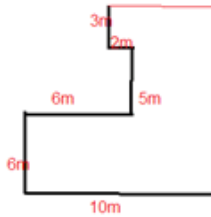
- 91.(5)
- 93.(2)
- 92.(1)



94.(1) Building E is 0.6 km away from building A; it can be in any direction (north, south, east, and west) from A. But in any case building E will always in North-West direction with respect to building C. We can't determine the distance between building D to A because in the question E's direction is not given from any point.



95.(1) $\sqrt{14^2 + 6^2} = 2\sqrt{58}$ m



96-100.

Word	Code
Information	Co
Enterprises	So
Planning	Qo
Resource	Go
Gujarat	No
Models	To
Providing	Lo
Business	Jo
In	Vo
The/of	Do/ro
Execution/system	Ko/wo

96.(2)

97.(3)

98.(4)

99.(3)

100.(3)

