

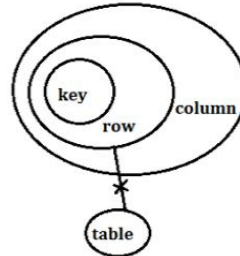
IBPS RRB Officer Scale-I Preliminary Grand Test –IRP-180826

HINTS & SOLUTIONS

ANSWER KEY

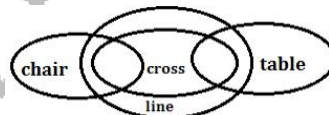
1. (2)	21. (2)	41. (1)	61. (4)
2. (1)	22. (3)	42. (3)	62. (3)
3. (5)	23. (1)	43. (2)	63. (1)
4. (1)	24. (2)	44. (5)	64. (5)
5. (4)	25. (2)	45. (2)	65. (2)
6. (4)	26. (2)	46. (3)	66. (2)
7. (2)	27. (4)	47. (1)	67. (1)
8. (3)	28. (2)	48. (5)	68. (4)
9. (3)	29. (3)	49. (2)	69. (2)
10. (4)	30. (4)	50. (1)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

3. (5)



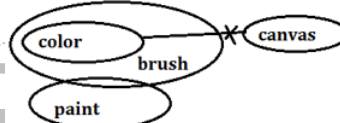
For-I True because All key are row and No row is table. Therefore, No key is table is True.
For-II False because All those columns which are row cannot be table.

4. (1)



For-I From Venn diagram it is clear that Some Cross are line. Hence conclusion I can be concluded.
For-II False, because there is no direct relation between Chair and table.

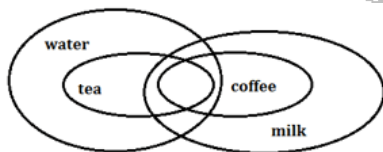
5. (4)



For-I False as there is no direct relation between paint and canvas.
For-II From Venn diagram All those brush which are color cannot be canvas. Hence conclusion II cannot be concluded.

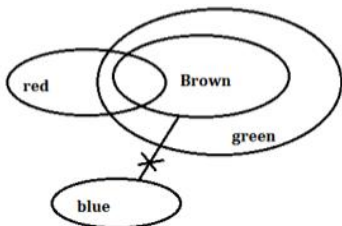
HINTS & SOLUTIONS

1. (2)



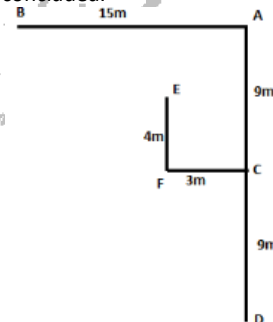
For-I Since it is a definite case so possibility case will not hold true.
For-II From Venn diagram it is clear that some milk are water. Hence conclusion I is true.

2. (1)



For-I True because All those green which are brown cannot be blue.
For-II False because Some red which are Brown can never be blue therefore, All red cannot be blue.

6-8.

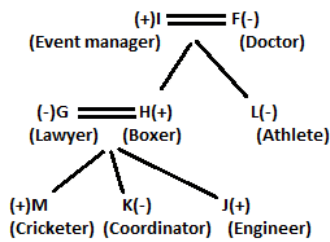


- 6. (4)
- 7. (2)
- 8. (3)
- 9-13.

Southeast
Northeast
Distance = $\sqrt{9^2 + 12^2} = 15m$

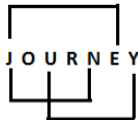
L is the daughter of Event manager. I who is an Event manager is married to F. H is a Boxer who is married to G who is a lawyer. G is the mother of J and K. There are two married couples in the family. Doctor is grandmother of K, who has two brothers. K is a coordinator. Coordinator is a female while the one who is an Engineer is a male. The Athlete is the sister of the Boxer. J is not a Cricketer. So we get the final arrangement as-

Grand Test – IRP-180826



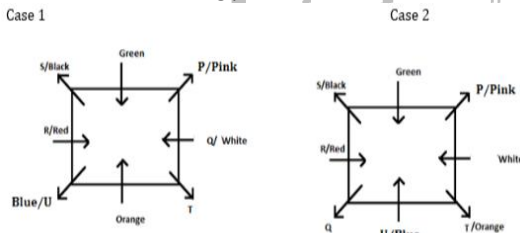
9. (3) 10. (4) 11. (3)
 12. (1) 13. (3)
 14. (3)

Three

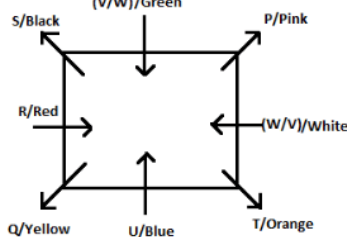


15. (4) 16. (3)
 17. (4)
- | | | | | | | |
|---|---|---|---|---|---|---|
| P | O | U | R | I | N | G |
| 1 | 4 | 6 | 2 | 3 | 5 | @ |

18-22. R likes red color and sits third to the right of T. Only two persons sit between T and the one who likes green color. The one who likes red color faces the one who likes white color. S likes black color and is an immediate neighbor of R. P likes pink color. U likes blue color. Q sits second to the right of the one who likes orange color. U is not an immediate neighbor of the one who likes white color. We have following possibilities-



Now, Neither V nor W likes orange color. This will eliminate Case 1. So the final arrangement will be-



18. (4) 19. (5) 20. (5)
 21. (2) 22. (3)

23-27. One person lives between S3 and S4, who does not live on odd numbered floor. The person who studies Maths lives just above the floor of S3. One person lives between the person who studies Maths and the one who studies Chem. So, there will be three possible cases-

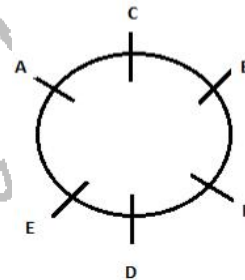
Case-1			Case-2			Case-3		
Floor	Person	Subject	Floor	Person	Subject	Floor	Person	Subject
5		Chem	5		Maths	5		
4	S4		4	S3		4	S4	
3		Maths	3		Chem	3		Maths
2	S3		2	S4		2	S3	
1			1			1		Chem

S5 lives below S4 but not immediately below. This will eliminate Case 2. S5 does not study chem. So this will eliminate Case 3. Two persons live between S2 and the one who studies English. The one who studies Phy does not live on even numbered floor. S1 does not studies Chem. So the final arrangement is---

Floor	Person	Subject
5	S2	Chem
4	S4	Bio
3	S1	Maths
2	S3	English
1	S5	Phy

23. (1) 24. (2) 25. (2)
 26. (2) 27. (4)
28-31.

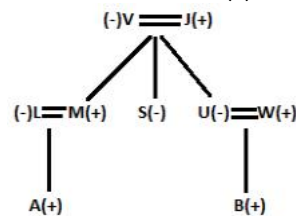
B sits second to the right of D. A does not face B. B is not an immediate neighbor of A. This will fix position of A to the second left of D. F does not face D. F does not sit to the immediate right of A. This will fix F to the immediate right of D. Now, C does not sit second to the right of E. So the final arrangement will be-



28. (2) 29. (3)
 30. (4) 31. (3)
32-36.

Elements	Codes
sweets	sa
are	ra
food	fa
tasty	ta
good	ga
nutrients	na
healthy	ha
business	ba

32. (3) 33. (2)
 35. (3) 36. (3)
37-40.



37. (3) 38. (2)
 39. (1) 40. (3)

41. (1) $\boxed{10}$ 8 12 30 112 550
 $\times 1-2 \quad \times 2-4 \quad \times 3-6 \quad \times 4-8 \quad \times 5-10$
 Wrong number = 15

42. (3) 1800 1071 828 747 $\boxed{720}$ 711
 $-729 \quad -243 \quad -81 \quad -27 \quad -9$
 Wrong number = 722

Grand Test – IRP-180826



43. (2) $\boxed{41}$ $\begin{matrix} 68 & 108 & 161 & 227 & 306 \\ +27 & +40 & +53 & +66 & +79 \\ +13 & +13 & +13 & +13 & \end{matrix}$

Wrong number = 35

44. (5) $\begin{matrix} 216 & 185 & 156 & 133 & 114 & \boxed{97} \\ -31 & -29 & -23 & -19 & -17 & \end{matrix}$ (prime number)

Wrong number = 92

45. (2) $\begin{matrix} 111 & 113 & 121 & 153 & 281 & \boxed{793} \\ +\frac{2^2}{2} & +\frac{4^2}{2} & +\frac{8^2}{2} & +\frac{16^2}{2} & +\frac{32^2}{2} & \end{matrix}$

Wrong number = 785

Or

$\begin{matrix} 111 & 113 & 121 & 153 & 281 & \boxed{793} \\ \times 4 & \times 4 & \times 4 & \times 4 & \times 4 & \end{matrix}$

46. (3) Total number of cars manufactured in year 2002, 2004 and 2006 together = 120 lakh
Total number of cars sold in year 2001, 2003 and 2005 together = 20 + 25 + 10 = 55 lakh
Required difference = 65 lakh

47. (1) Required ratio = $\frac{10+5}{25} = \frac{3}{5}$

48. (5) Required average = $\frac{30+40+25+35}{4} = \frac{130}{4} = \frac{65}{2} = 32.5$ lakh

49. (2) Required percentage = $\frac{15}{30+15} \times 100\%$
= $33\frac{1}{3}\%$

50. (1) Manufactured cars in year 2007 = $\frac{45+15}{2} = 30$ lakh
Cars sold in year 2007 = $30 \times \frac{80}{100} = 24$ lakh

51. (2) Let the age of son be x yr.
Then, age of person = 2.5x yr.
Age of his wife = $\frac{25}{12}x$ yr.
Person : his son ; his wife = 30x : 12x : 25x
ATQ,
 $\frac{30x-10}{12x-10} = \frac{25}{7} \Rightarrow 90x = 180$
 $\Rightarrow x = 2$.
Average age of all = $\frac{30x+12x+25x}{3} = \frac{67}{3} \times 2 = \frac{134}{3}$ yr
= $44\frac{2}{3}$ yr.

52. (4) Let height of the cone be h cm.
ATQ,
 $\frac{4}{3}\pi \times (12)^3 = 6 \times \frac{1}{3}\pi \times (8)^2 \times h$
 $\Rightarrow h = \frac{4 \times 12 \times 12 \times 12}{6 \times 8 \times 8} = 18$ cm
Slant height = $\sqrt{(18)^2 + (8)^2} = \sqrt{388} = 2\sqrt{97}$ cm.

53. (3) Average speed of a boy = $\frac{2 \times 10 \times 15}{10+15} = 12$ km/hr
(when, distance is same for two different case. Then, average speed = $\frac{2 \times x \times y}{x+y}$)
Speed of boat in downstream = 12 km/hr.
Speed of boat in upstream = $\frac{10.5}{4.5} = 9$ km/hr.
 \therefore Required ratio = $\frac{12+9}{12-9} = 7 : 1$

54. (2) Let the amount be Rs. 100x
1st year interest = $\frac{100x \times 8 \times 1}{100} = 8x$

ATQ,
 $\frac{8x}{\frac{(108x-10944) \times 6 \times 1}{100}} = \frac{28}{9}$
 $\Rightarrow \frac{8x \times 100}{(108x-10944) \times 6} = \frac{28}{9}$
 $\Rightarrow \frac{100x}{(108x-10944)} = \frac{7}{3} \Rightarrow 456x = 10944 \times 7$
 $\Rightarrow x = 168$ Rs.
 \therefore Amount = Rs. 16,800

55. (4) Let the total revenue of the college be 100x Rs.
Revenue from post graduate = 60x Rs.
Revenue from graduation course = 40x Rs.
New Revenue from post-graduation course = $60x \times \frac{130}{100} = 78x$ Rs
New revenue from graduation course = $40x \times \frac{120}{100} = 48x$
Total new Revenue = 78x + 48x
= 126x Rs.

\therefore % increase in revenue = $\frac{(126x-100x)}{100x} \times 100$
= 26%

56. (3) $5x + 2y = 4$... (i)
 $-2x + y = 11$... (ii)
Multiply (i) by 2 and (ii) by 5; and on adding
 $y = 7$
And $x = -2$
 $\therefore y > x$

57. (5) I. $20x^2 + 37x + 15 = 0$
 $\Rightarrow 20x^2 + 25x + 12x + 15 = 0$
 $\Rightarrow 5x(4x + 5) + 3(4x + 5) = 0$
 $\Rightarrow (5x + 3)(4x + 5) = 0$
 $x = -\frac{3}{5}$ or $-\frac{5}{4}$
II. $8y^2 + 26y + 15 = 0$
 $\Rightarrow 8y^2 + 20y + 6y + 15 = 0$
 $\Rightarrow 4y(2y + 5) + 3(2y + 5) = 0$
 $\Rightarrow (4y + 3)(2y + 5) = 0$
 $y = -\frac{3}{4}$ or $-\frac{5}{2}$
No relation

58. (3) I. $3x^2 - 7x + 4 = 0$
 $\Rightarrow 3x^2 - 4x - 3x + 4 = 0$
 $\Rightarrow (3x - 4)(x - 1) = 0$
 $x = \frac{4}{3}$ or 1
II. $2y^2 - 9y + 10 = 0$
 $\Rightarrow 2y^2 - 4y - 5y + 10 = 0$
 $\Rightarrow (2y - 5)(y - 2) = 0$
 $\Rightarrow y = \frac{5}{2}$ or 2
 $y > x$

59. (4) I. $2x^2 + 17x + 36 = 0$
 $2x^2 + 9x + 8x + 36 = 0$
 $x(2x + 9) + 4(2x + 9) = 0$
 $\Rightarrow (x + 4)(2x + 9) = 0$
 $x = -4$ or $-\frac{9}{2}$
II. $2y^2 + 13y + 20 = 0$
 $\Rightarrow 2y^2 + 8y + 5y + 20 = 0$
 $\Rightarrow 2y(y + 4) + 5(y + 4) = 0$
 $\Rightarrow y = -4$ or $-\frac{5}{2}$
 $y \geq x$

Grand Test – IRP-180826



60. (2) I. $2x = 9$
 $x = \frac{9}{2}$
 II. $4y^2 - 24y + 27 = 0$
 $\Rightarrow 4y^2 - 18y - 6y + 27 = 0$
 $\Rightarrow 2y(2y - 9) - 3(2y - 9) = 0$
 $\Rightarrow y = \frac{3}{2}$ or $\frac{9}{2}$
 $x \geq y$

61. (4) Let efficiency of Arun & Rahul be x unit/day & y unit/day respectively.
 Atq,
 $(x + y) \times 12 = (x \times 1.4 + y \times 0.8) \times 10$
 $12x + 12y = 14x + 8y$
 $4y = 2x$
 $\frac{x}{y} = \frac{2}{1}$
 Therefore, efficiency of Arun & Rahul together = 3 units/day
 Total work = $3 \times 12 = 36$ units
 Time in which Rahul alone can complete the work = $\frac{36}{1} = 36$ days

62. (3) Let sum be Rs P
 Atq,
 $\frac{CI}{P} = \left[\left(1 + \frac{R}{100} \right)^2 - 1 \right]$
 $\frac{24}{25} + 1 = \left(1 + \frac{R}{100} \right)^2$
 $\frac{49}{25} = \left(1 + \frac{R}{100} \right)^2$
 $R = 40\%$
 For time period of 2 years
 $\frac{PR^2}{100^2} = \text{difference} \Rightarrow 120 = \frac{P \times (40)^2}{(100)^2}$
 $P = \text{Rs } 750$
 $SI = \frac{P \times R \times \text{Time}}{100} = \frac{750 \times 40 \times 3}{100} = \text{Rs } 900$

63. (1) Since total time is 8 hours 30 min
 Therefore car P will travel for 4 hours 30 min
 Car Q will travel for 4 hours
 Therefore,
 $x = 20 \times \frac{9}{2} + 40 \times 4$
 $= 90 + 160 = 250$ km

64. (5) Let marked price of Article A be Rs 100x
 S.P. of article A = $100x \times \frac{80}{100} = \text{Rs } 80x$
 C.P. of article B = $80x \times \frac{5}{5} = \text{Rs } 96x$
 S.P. of article B = $96x \times \frac{115}{100} = \text{Rs } 110.4x$
 Atq,
 $110.4x - 80x = 1216$
 $x = 40$
 \therefore marked price of article A = 40×100
 $= \text{Rs } 4000$

65. (2)

	A	B	C
Amounts	3	5	7
for 4 months	4×3	4×5	4×7
for rest 8 months	$8 \times (3+4)$	8×5	8×7

Profit $\Rightarrow 17 : 15 : 21$
 \downarrow
 3150
 1 unit = 150 Rs.
 Total profit = $150 \times (17+15+21) = \text{Rs } 7950$

66. (2) Required ratio = $\frac{8 \times \frac{36000}{100}}{36000 \times \frac{82}{100} \times \frac{4}{9}}$
 $= \frac{8 \times 9}{32 \times 4} = \frac{9}{16}$

67. (1) Average number of boys studying in BSC and BCA together
 $= \frac{36000 \left(\frac{18}{100} \times \frac{5}{9} + \frac{21}{100} \times \frac{5}{9} \right)}{2}$
 $= 3400$
 Number of girls studying BBA = $36000 \times \frac{15}{100} \times \frac{4}{9} = 2400$
 Required % = $\frac{3400 - 2400}{2400} \times 100$
 $= 41 \frac{2}{3}\%$

68. (4) Total number of boys studying in BA and B.Com together
 $= \frac{36000}{100} \times \frac{5}{9} \times (11 + 8) = 200 \times 19 = 3800$

69. (2) Total number of students studying B.com and Engineering together
 $= 36000 \times \frac{40}{100} = 14,400$
 Total number of boys studying B.com and Engineering together
 $= \frac{5}{9} \times 14400 = 8000$.
 Required number of girls = 6400
 Required difference = 1600

70. (3) Difference between number of students in Engineering and B.Com
 $= \frac{24}{100} \times 36000 = 8640$
 Total number of students studying BBA, BSC, BA and BCA together
 $= \frac{36000}{100} \times 60 = 21600$
 Required % = $\frac{8640}{21600} \times 100 = 40\%$
 Alternative Sol.
 Required % = $\frac{(32-8)}{(21+15+13+11)} \times 100 = 40\%$

71. (3) Required percentage = $\frac{(40+35) - (25+35)}{(25+35)} \times 100$
 $= \frac{75 - 60}{60} \times 100 = 25\%$

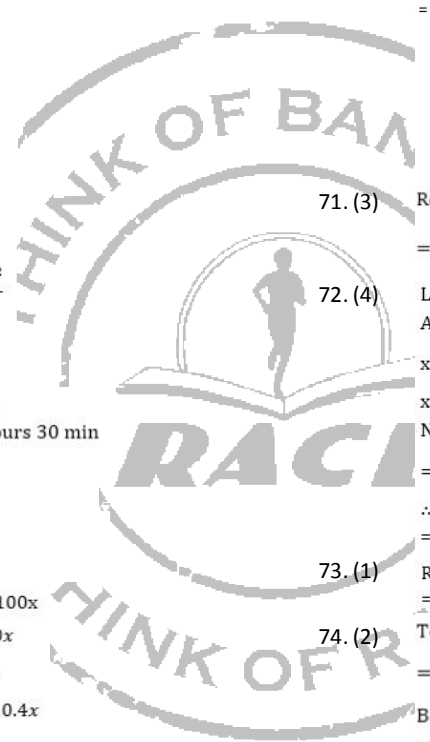
72. (4) Let no. of books sold by shopkeeper Y in 2009 be x
 Atq,
 $x \times \frac{120}{100} = 30,000$
 $x = 25,000$
 No. of books sold by Shopkeeper Z in 2009
 $= 35000 \times \frac{75}{100} = 26,250$
 \therefore Required total = $26,250 + 25,000$
 $= 51,250$

73. (1) Required difference = $(35 + 25 + 40) - (40 + 15 + 40)$
 $= 100 - 95 = 5000$

74. (2) Total books sold in 2015
 $= \frac{80,000}{2} \times 3 = 120,000$
 Books sold by Y in 2015 = $20,000 \times \frac{140}{100} = 28,000$
 Total books sold by X & Z in 2015
 $= 120000 - 28000 = 92,000$
 Required percentage = $\frac{92000}{80000} \times 100$
 $= 115\%$

75. (5) Average books sold by X & Y in 2011 & 2012 together
 $= \frac{1}{2} [55,000 + 75,000]$
 $= 65,000$
 Average books sold by Z in 2010 & 2014
 $= \frac{1}{2} [35,000 + 35,000] = 35,000$
 Required difference = $65,000 - 35,000$
 $= 30,000$

76. (4) $(14 + 16 + 14 + 12) + \left(\frac{1}{11} + \frac{3}{11} + \frac{4}{121} + \frac{3}{11} \right) = ?$
 $? = 56 + \left(\frac{11 + 33 + 4 + 33}{121} \right)$
 $= 56 + \frac{81}{121}$
 $= 56 \frac{81}{121}$



Grand Test – IRP-180826



77. (3) $4059 + 3312 - 3381 = 3990$

78. (1) $280.5 - 241.5 = ?$
 $? = 39$

79. (2) $12 \times 15 + 156 = (?)^3 + 120$

$$\Rightarrow (?)^3 = 216$$

$$\therefore ? = 6$$

80. (2) $\frac{1285 \times 76}{100} = \frac{1256 \times 35}{100} + ?$

$$\Rightarrow 976.6 = 439.6 + ?$$

$$\therefore ? = 976.6 - 439.6 = 537$$

