IBPS RRB Office Asst. Preliminary Grand Test –IRP-180823

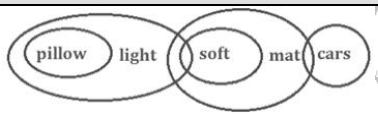
HINTS & SOLUTIONS

ANSWER KEY

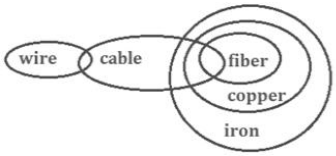
1. (3)	21. (2)	41. (1)	61. (3)
2. (2)	22. (3)	42. (5)	62. (2)
3. (4)	23. (4)	43. (1)	63. (3)
4. (3)	24. (1)	44. (2)	64. (4)
5. (2)	25. (3)	45. (5)	65. (2)
6. (3)	26. (5)	46. (3)	66. (2)
7. (1)	27. (2)	47. (4)	67. (4)
8. (5)	28. (1)	48. (2)	68. (1)
9. (4)	29. (4)	49. (4)	69. (3)
10. (2)	30. (1)	50. (2)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

HINTS & SOLUTIONS

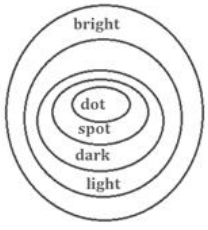
1. (3)



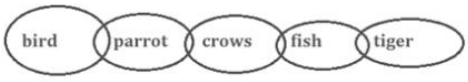
2. (2)



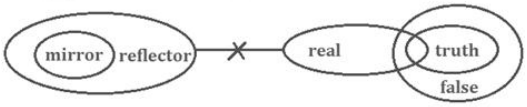
3. (4)



4. (3)



5. (2)



6-10. Basketball is organized on Thursday. Volleyball is organized immediately before Basketball. More than two sports are organized between Badminton and Cricket and neither of them was on Monday. There are as many sports between Basketball and Badminton as there are between Hockey and Volleyball. Football is not organized on one of the days after Hockey. Wednesday is not an off day. We have following possibilities-

Case 1 Case 2 Case 3 Case 4

Days	Sports	Days	Sports	Days	Sports	Days	Sports
Monday		Monday		Monday		Monday	
Tuesday	Badminton	Tuesday	Badminton	Tuesday	Cricket	Tuesday	Cricket
Wednesday	Volleyball	Wednesday	Volleyball	Wednesday	Volleyball	Wednesday	Volleyball
Thursday	Basketball	Thursday	Basketball	Thursday	Basketball	Thursday	Basketball
Friday	Hockey	Friday	Hockey	Friday	Hockey	Friday	Hockey
Saturday	Cricket	Saturday		Saturday	Badminton	Saturday	
Sunday		Sunday	Cricket	Sunday		Sunday	Badminton

Now, Sunday is not an off day. Now, Badminton is not organized after the off day. This will eliminate Case 1, Case 3 and Case 4. So the final arrangement will be-

Days	Sports
Monday	Football
Tuesday	Badminton
Wednesday	Volleyball
Thursday	Basketball
Friday	Hockey
Saturday	OFF
Sunday	Cricket

6. (3) 7. (1)
8. (5) 9. (4) 10. (2)

11-15. V was born in the month having 30 days. Two persons were born between V and Q. More than three persons were born between X and P. P was born after Q. T was born before V in the month of 31 days.
So there are four possible cases –

Case 1 Case 2 Case 3 Case 4

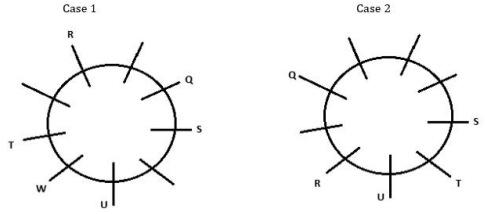
Month	Person	Month	Person	Month	Person	Month	Person
January	T	January	X	January	X	January	X
March	X	March	T	March	Q	March	Q
April	V	April	V	April		April	
May		May		May	T	May	T
June		June		June	V	June	V
July	Q	July	Q	July	P	July	
August	P	August	P	August		August	P

Now, S was born immediately before R. This will eliminate Case 3 and Case 4. Now, T was not born on January. This will eliminate Case 1. So the final arrangement will be –

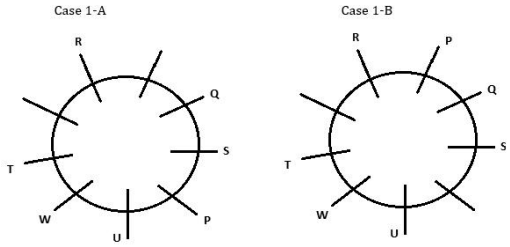
Month	Person
January	X
March	T
April	V
May	S
June	R
July	Q
August	P

11. (4) 12. (1)
13. (2) 14. (2) 15. (5)

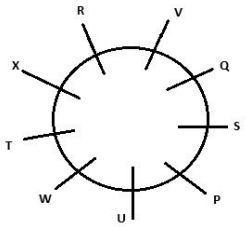
16-20. S sits second to the right of U. Only two persons sit between S and R. Q sits second to the left of R. Only one person sit between R and T. We have two possibilities-



Now, Neither W nor T is an immediate neighbor of R or S. This will eliminate Case 2. W is an immediate neighbor of T. Only two persons sit between P and T. Again we will have two cases-



Now, V sits third to the right of P. This will eliminate Case 1-B. So the final arrangement will be-

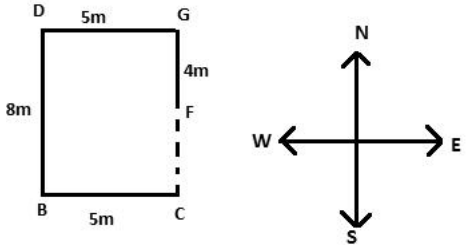


16. (4) 17. (3)
18. (3) 19. (2) 20. (3)

21-23. $F > A > E > C\ (26\ years) > B > D$

21. (2) 22. (3) 23. (4)

24-25.



24. (1) 4m
25. (3) South
26. (5) $V \le S < L < J$
I. $V < L$(True)
II. S<J (True)
27. (2) $M \le R < J \le H$
I. $M \le H$(False)
II. R<H (True)
28. (1) $H \ge F = G > M$
I. H>M (True)
II. H>G (False)
29. (4) $R < J > T \le L$
I. $R = T$(False)
II. J=L (False)
30. (1) $W = T \ge K > F$
I. $W \ge K$(True)
II. W=K (False)

31-35. The machine rearranges one word and one number in each step. The "words" are arranged in the reverse alphabetical order as per they appear in the dictionary from the left end in the last step. Such that "food" will arrange first in step I, then "forest" in step II and so on. "numbers" are arranged in the decreasing order from the right end. It means smallest number will arrange first i.e. "16" then "33" and so on.

Input: **dish 17 cure 54 turns 43 mouse 72**
Step I: cure dish 54 turns 43 mouse 72 17
Step II: dish cure 54 turns mouse 72 17 43
Step III: mouse dish cure turns 72 17 43 54
Step IV: turns mouse dish cure 17 43 54 72

31. (2) 32. (3)
33. (4) 34. (2) 35. (2)
36. (2) T 37. (3) V
38. (5) Five – #8W, $1P, 75V, 24S, K6$
39. (4) Five – WU9, PN&, VL%, RE@, ST#
40. (4) 4#S
41. (1) Series is $\times4\text{-}1, \times4\text{-}2, \times4\text{-}3, \times4\text{-}4, \times4\text{-}5, \ldots\ldots\ldots\ldots$
42. (5) Series is $\times1+10, \times2\text{-}10, \times3+10, \times4\text{-}10, \times5+10$
43. (1) Series is $\times0.5+1, \times0.5+1, \times0.5+1, \times0.5+1, \ldots\ldots\ldots$
44. (2) Series is $\times1\text{-}(1)^2\times12, \times2\text{-}(2)^2\times12, \times3\text{-}(3)^2\times12, \ldots\ldots\ldots$
45. (5) Series is -3, -9, -27, -81, -243,.....
46. (3) If MP is x Rs then after 10% discount, selling price of the product will be equal to 0.9x
But there is 5% tax on selling price which is also included in the price of the product.
5% of 0.9x ⇒ 0.045x
Net value of the product=0.9x+0.045x=0.945x
ATQ,
$0.945x = 9450$
$\Rightarrow x = \frac{9450}{0.945}$
$\Rightarrow x = 10000$

47. (4)

	A	B
Income	0.75x	x
Expenditure	0.6y	y

A's saving= (0.75x−0.6y)
B's saving = (x−y)
Given, 0.75x = 0.8y
Or, 15x = 16y
$\Rightarrow \frac{\text{A's Savings}}{\text{B's savings}} = \frac{0.8y - 0.6y}{\frac{16y}{15} - y} = \frac{0.2y}{\frac{1}{15}y} = \frac{3}{1}$

48. (2) ATQ,
$\frac{3}{A} = \frac{1}{B} + \frac{1}{C}$ .....(i)
$\frac{4}{B} = \frac{1}{A} + \frac{1}{C}$ .....(ii)
$\frac{1}{A} + \frac{1}{B} + \frac{1}{C} = \frac{1}{24}$ .....(iii)

From equation (i) and (iii)
$\frac{4}{A} = \frac{1}{24}$
A = 96 Days

49. (4) Total time of travel required for A & B to meet = $\frac{60}{10+5} = 4\ hr$
And dog will travel only for 4 hr (until A & B meet)
= 12 × 4
= 48 km

50. (2) Let the population of male and female in city X be x and y respectively.
Population of males after 3 years = $x+\frac{8}{100}x = 1.08x$
Population of females after 3 years = $y+\frac{20}{100}y = 1.2y$

ATQ,
$\Rightarrow \frac{1.08x}{1.2y} = \frac{3}{2}$
$\Rightarrow \frac{x}{y} = \frac{5}{3}$
⇒ Male and Female population is 1,00,000 and 60,000 respectively

51. (3) Samsung phones sold in 2014 = 7000
MI phones sold in 2016 = 9000
Samsung phones sold in 2016 = 8000
Required % $= \frac{(7000+9000)-8000}{8000} \times 100\%$
$= 100\%$

52. (1) Average of Samsung phones sold $= \frac{6000+7000+8400+8000+12000}{5} = 8280$
Average of Micromax phones sold $= \frac{6600+8000+8000+10000+9400}{5} = 8400$
Required difference = 8400 – 8280 = 120

53. (4) Samsung phones sold in 2012 $= \frac{6000\times100}{120} = 5000$
Micromax phones sold in 2012 $= \frac{6600\times100}{100} = 6000$
MI phones sold in 2012 = 6400
So, Average number of phones sold in 2012
$= \frac{5000+6000+6400}{3} = \frac{17400}{3} = 5800$

54. (2) Total customers who bought Samsung phones in 2015 = 8400
Male customers who bought Samsung phones in 2015 = $\frac{7}{12} \times 8400 = 4900$
Females customers who bought Samsung phones in 2015 = 8400 – 4900 = 3500
Total customers who bought Samsung phones in 2017 = 12000
Male customers who bought Samsung phones in 2017 = $12000 \times \frac{13}{24} = 6500$
Female customers who bought Samsung phones in 2017 = 12000 – 6500 = 5500
Required ratio = $\frac{4900+6500}{3500+5500} = \frac{11400}{9000}$
= 19 : 15

55. (1) Total customer in 2015 = 8400 + 8000 + 10600 = 27000
Total female customers in 2015 = $\frac{4}{9} \times 27000 = 12000$
Female customers who bought Samsung phones in 2015
$= \frac{5}{12} \times 8400 = 3500$
Female customers who bought Micromax phones in 2015
$= \frac{9}{16} \times 8000 = 4500$
So, female customers who bought MI phones= 12000 – (3500 + 4500)
= 4000

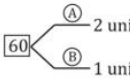
56. (1) Let Radha's present age = R
And Raju's present age = r
R – 4 = 2 (R - 10)
R – 4 = 2R – 20
R=16
R : r = 4 : 3
r = 12 years
After 3 years Raju's age = r + 3
= 15 years

57. (3) REGRESSIVE
R R E E E G S S I V
Total no. of ways = $\frac{\lfloor 10}{\lfloor 2 \lfloor 3 \lfloor 2}$
$= \frac{10\times9\times8\times7\times6\times5\times4\times\lfloor 3}{2\times\lfloor 3\times2}$
= 151200

58. (4) A + B + C = 93 × 3
A + B + C =279
A + B + C + D = 279 + 81 = 360
Required average = $\frac{360}{4}$ = 90 kg

59. (2) Average speed $= \frac{total\ distance}{total\ time}$
$= \frac{9+15+30}{\frac{9}{3}+\frac{80}{10}+\frac{15}{5}}$
$= \frac{54}{9}$
= 6 km/hr

60. (3) LCM(60,30)=60
let 60 units is the total work.



In 10 minutes A and B will do = (2 + 1) × 10 = 30 units
Remaining work will be done by B alone in = $\frac{60-30}{1}$ = 30 minutes.
Total time to fill the tank = 10 + 30 = 40 minutes

61. (3) $\frac{10\times540}{100} + 15\times4 = ?\times2$
54 + 60 = ? × 2
$\frac{114}{2} = ?$
57 = ?

62. (2) $\sqrt[3]{216\times8} + \sqrt{16\times25} = \sqrt{?}\times4$
$6\times2 + 4\times5 = \sqrt{?}\times4$
$\frac{32}{2} = \sqrt{?}$
? = 256

63. (3) $4\times12 - \frac{12\times14}{7\times2} = \sqrt{?} + 13$
48 – 6 × 2 = $\sqrt{?}$ + 13
36 – 13 = $\sqrt{?}$
23 = $\sqrt{?}$
? = 529

64. (4) ?% of 1400 + $(50)^2$ = 270 + 20% of 11850
?% of 1400 + 2500 = 270 + $\frac{11850}{5}$
?% of 1400 = 2640 – 2500
?% of 1400 = 140
? = 10

65. (2) $\frac{729}{3^4} + ? = \frac{625\times5}{5^2}$
$\frac{729}{81} + ? = 125$
? = 116

66. (2) Req. Ratio ⇒ 10% of 2040 : 12% of 1450
$= \frac{10\times2040}{100} : \frac{12\times1450}{100}$
= 34 : 29

67. (4) Req. number = 12% of 1450 + 25% of 2040
= 684

68. (1) Number of children not attending school from L
= (15% of 2040) – (14% of 1450)
= 306 – 203
= 103
Number of children not attending school from P
= (30% of 2040) – (22% of 1450)
= 612 – 319 = 293
Total = 396

69. (3) Total children from villages P and M
= (30 + 25)% of 2040
= 1122
Children ending school from L and N
= (14 + 12)% of 1450
= 377
Req. difference = 1122 – 377
= 745

70. (4) Req.% $= \frac{22\%\ of\ 1450}{30\%\ of\ 2040} \times 100$
$= \frac{319}{612} \times 100 \approx 52\%$

71. (4) Let radius of circle and side of square are 'r' and 'a' respectively
Perimeter of Circle and square is equal
⇒ 2πr = 4a
$a = \frac{\pi r}{2}$
Required Ratio = Area of circle : Area of square
$= \pi r^2 : a^2$
$= \pi r^2 : (\frac{\pi}{2}r)^2$
= 14 : 11

72. (2) $\frac{60+24+50+73+13+x+y+z}{8} = 44$

$x + y + z = 352 - 220$

$x + y + z = 132$

Average of (x, y & z) $= \frac{x+y+z}{3}$

$= \frac{132}{3} = 44$

73. (4) Let the average = x Rs.

$50x + 128 = 62(x - 2)$

$50x + 128 = 62x - 124$

$12x = 252$

$x = 21$ Rs.

74. (1) Let quantity of water and milk present in jar be 200x and 300x

1. Milk added 30% of quantity of water $\rightarrow \frac{30}{100} \times 200x = 60$

Now, milk quantity $\rightarrow 360x$

2. water added milk present 10% of quantity of $= \frac{10}{100} \times 360x = 36x$

Water quantity become = 236x

New ratio of water : Milk = 236x : 360x

= 59 : 90

75. (1) Let Sahil's marks = 80x

So, Sumit's marks $= \frac{80x \times 112.5}{100} = 90x$

So, Ajay's marks $= \frac{90x \times 106\frac{2}{3}}{100} = 96x$

ATQ,

Ajay's marks is 40 more than the Sahil's marks

$\Rightarrow 96x - 80x = 40$

$\Rightarrow x = 2.5$

Total marks scored by all three

$= (80 + 90 + 96) \times 2.5 = 266 \times 2.5 = 665$

76. (1) $2[133.33\%\ of\ 153 + \left(25 + 33\frac{1}{3}\right)\%\ 300 = ?$

$2\left[100 + 33\frac{1}{3}\right]\%\ of\ 153 + \frac{300}{4} + \frac{300}{3} = ?$

$2\left[153 + \frac{153}{3}\right] + 75 + 100 = ?$

$2 \times 204 + 175 = ?$

$408 + 175 = ?$

$583 = ?$

77. (2) $\frac{77077}{7007} \times \frac{125}{5} \times 2 = ?$

$11 \times 25 \times 2 = ?$

$550 = ?$

78. (1) $\frac{1}{4} \times 124 + 35\%\ of\ 60 = ?$

$31 + \frac{7}{20} \times 60 = ?$

$31 + 21 = ?$

$52 = ?$

79. (2) $8557 + 1723 - 1231 - 7321 = (?)^3$

$1236 + 492 = (?)^3$

$1728 = (?)^3$

$? = 12$

80. (2) $(?)^2 = \frac{39 \times 1323}{13 \times 9}$

$(?)^2 = 441$

$? = 21$