

IBPS RRB Officer Scale-I Preliminary Grand Test –IRP-180714

HINTS & SOLUTIONS

ANSWER KEY

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

Case-1

Floor	Person	Cartoon
7	P	
6	S	Tweety
5		
4	N	Popeye
3	M	
2	R	
1		

Case-2

Floor	Person	Cartoon
7		
6	S	Tweety
5		
4	N	Popeye
3	M	
2	R	
1	P	

Only three persons live between the persons who like Shinchan and Minions. The person who likes Shinchan live on any floor above the N's floor, but not on topmost floor.

O does not like Shinchan or Minions. So, case 1 will be eliminated. The person who likes Ben10 lives on the floor immediately above the floor of the person who likes Simpson. Final arrangement will be----

Floor	Person	Cartoon
7	O	Doremon
6	S	Tweety
5	Q	Shinchan
4	N	Popeye
3	M	Ben10
2	R	Simpson
1	P	Minions

HINTS & SOLUTIONS

1-5.

Code	#	%	\$	@	&
Symbol	<	≤	≥	=	>

- 1. (1) A & D (True) B # E (False)
- 2. (4) J @ M (False) J # M (False)
- 3. (1) S & W (True) S @ W (False)
- 4. (2) R & O (False) N & Q (True)
- 5. (4) G & K (False) H # K (False)
- 6. (3) 7. (1)
- 8. (4) 9. (3) 10. (2)

11-15. The person who likes Popeye lives on floor numbered 4. Only two persons live between P and the one who likes Popeye. Therefore, there are two possible cases. M lives on any odd numbered floor below the one who likes Popeye, but not on lowermost floor. S lives on an even numbered floor but neither immediately above nor immediately below the floor of M. Only two persons live between M and the person who likes Tweety. Only one person lives between N and R. R lives on an even numbered floor and does not like Popeye----

- 11. (1)
- 12. (3)
- 13. (2)
- 14. (2) 15. (1)
- 16. (2)
- 17. (4) TUJ KEF
- 18. (2)
- 19. (4) 20. (5)

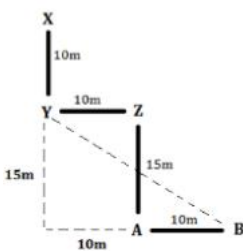
21-25. S takes lecture on Saturday. No one takes lecture after Q i.e. Q takes his lecture on Sunday. Not more than two persons take lecture between S and R. P takes his lecture immediately before R. We will have four possibilities

Case 1		Case 2		Case 3		Case 4	
Days	Person	Days	Person	Days	Person	Days	Person
Monday		Monday		Monday		Monday	P
Tuesday		Tuesday		Tuesday	P	Tuesday	R
Wednesday		Wednesday	P	Wednesday	R	Wednesday	
Thursday	P	Thursday	R	Thursday		Thursday	
Friday	R	Friday		Friday		Friday	
Saturday	S	Saturday	S	Saturday	S	Saturday	S
Sunday	Q	Sunday	Q	Sunday	Q	Sunday	Q

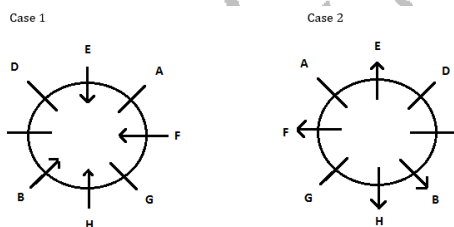
Now, T takes his lecture before U but not on Thursday. Neither Monday nor Friday is a Holiday. T does not take his lecture on Monday. This will eliminate Case 1, Case 2 and Case 3. The final arrangement will be -

Days	Person
Monday	P
Tuesday	R
Wednesday	T
Thursday	Holiday
Friday	U
Saturday	S
Sunday	Q

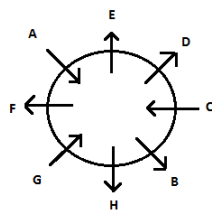
21. (5) 22. (4)
 23. (3) 24. (4) 25. (2)
26-27. X is 10m to the north of Y, who is to the northwest of B. Y is 10m to the west of Z. B is 10m to the east of A, who is 15m to the south of Z.



26. (3)
 27. (2) Distance between Y and B is $\sqrt{15^2 + 20^2} = \sqrt{625} = 25m$
28-30. (79 kg) X > D > W > (70kg) V > L > N
 28. (2)
 29. (1) Then, the difference between the weights of V and N is:
 70 – 66 = 4 kg.
 30. (4)
31-35. H sits opposite to E and both faces same direction. A is an immediate neighbor of E. D sits to the immediate right of E. D sits second to the left of B. G sits to the immediate left of F. G is not a neighbor of A. We get two possibilities –



Now, immediate neighbors of C face same direction. Immediate neighbors of E face opposite direction. G and C face same direction as A. Not more than four people face inside. This will eliminate Case 1. So the final arrangement will be –



31. (2) 32. (2)
 33. (4) 34. (5) 35. (3)
 36. (3)

H	I	L	L
7	2	8	8

 37. (3) FATE, FEAT, FETA

38. (3) 4
 39. (2) D
 40. (2) FISCAL
41. (2) I. $2x^2 - 25x + 72 = 0$
 $2x^2 - 16x - 9x + 72 = 0$
 $2x(x-8) - 9(x-8) = 0$
 $(2x-9)(x-8) = 0$
 $x = 8, \frac{9}{2}$
 II. $4y^2 - 12y - 27 = 0$
 $4y^2 + 6y - 18y - 27 = 0$
 $2y(2y+3) - 9(2y+3) = 0$
 $(2y-9)(2y+3) = 0$
 $y = \frac{-3}{2}, \frac{9}{2}$
 $x \geq y$
42. (1) I. $x^2 - 8x + 15 = 0$
 $\Rightarrow x^2 - 5x - 3x + 15 = 0$
 $\Rightarrow x(x-5) - 3(x-5) = 0$
 $\Rightarrow (x-3)(x-5) = 0$
 $\therefore x = 3 \text{ or } 5$
 II. $y^2 - 3y + 2 = 0$
 $\Rightarrow y^2 - 2y - y + 2 = 0$
 $\Rightarrow y(y-2) - 1(y-2) = 0$
 $\Rightarrow (y-1)(y-2) = 0$
 $\therefore y = 1 \text{ or } 2$
 $\therefore x > y$
43. (3) $2x + 3y = 14$ (I)
 $4x + 2y = 16$ (II)
 On, (I) × 2 – (II), we have
 $4x + 6y - 4x - 2y = 28 - 16$
 $\Rightarrow 4y = 12 \Rightarrow y = 3$
 From equation I,
 $2x + 3 \times 3 = 14$
 $\Rightarrow 2x = 14 - 9 = 5 \Rightarrow x = \frac{5}{2}$
 So, $x < y$
44. (5) I. $2x^2 + 11x - 195 = 0$
 $2x^2 + 26x - 15x - 195 = 0$
 $2x(x+13) - 15(x+13) = 0$
 $(2x-15)(x+13) = 0$
 $x = -13, \frac{15}{2}$
 II. $3y^2 + 10y - 125 = 0$
 $3y^2 + 25y - 15y - 125 = 0$
 $y(3y+25) - 5(3y+25) = 0$
 $(y-5)(3y+25) = 0$
 $y = \frac{25}{3}, 5$
 \therefore Relation cannot be established.

45. (2) $x^2 + 17x + 52 = 0$
 $x^2 + 13x + 4x + 52 = 0$
 $x(x + 13) + 4(x + 13) = 0$
 $(x+4)(x+13)=0$
 $x = -4, -13$
 II. $y^2 + 27y + 182 = 0$
 $y^2 + 14y + 13y + 182 = 0$
 $y(y + 14) + 13(y + 14) = 0$
 $(y+13)(y+14)=0$
 $y = -14, -13$
 $x \geq y$

46. (2) Circumference of any circle = $2\pi \times \text{radius}$
 Radius of 1st circle = $\frac{132}{2\pi} = 21$ cm
 Radius of 2nd circle = $\frac{176}{2\pi} = 28$ cm
 Side of square = $\frac{5}{7} \times (21 + 28) = 35$ cm
 Perimeter of square = $4 \times 35 = 140$ cm

47. (4) Let the investment of Q = 100x
 Investment of P = 125x
 Investment of R = 125x
 Ratio of profit, as time period is same for all
 $\frac{P}{125x} : \frac{Q}{100x} : \frac{R}{125x}$
 $\frac{5}{125} : \frac{4}{100} : \frac{5}{125}$
 ATQ,
 9 unit = Rs. 4050
 5 unit = $450 \times 5 = \text{Rs. } 2250$

48. (1) There are 9 letters in the given word.
 I come 2 times and L for 3 times.
 So, required number of ways = $\frac{9!}{2! \times 3!} = \frac{362880}{6 \times 2} = 30,240$

49. (3) Total cost price for five bikes = 42,500 + 12,500 = Rs. 55,000
 S.P. of 5 bikes = $\frac{55,000 \times 130}{100} = \text{Rs. } 71,500$
 S.P. of 4 bikes = 71500 - 12500 = Rs. 59,000
 Required average S.P. = $\frac{59,000}{4} = \text{Rs. } 14,750$

50. (1) Time taken by X = 8 hr.
 Time taken by Y = 7 hr.

	Time	Speed	LCM
X	8 hr	7	56 (Total distance)
Y	7 hr	8	

 \therefore time taken to cross each other
 $= \frac{56}{15} = 3 \frac{11}{15}$ hr.
 $= 3$ hr 44 min.
 \therefore Required time to cross = 11 : 44 am

51. (4) Let the cost price be 100x
 then, profit = 175x
 S.P. = 275x
 Now, new C.P. = $100x \times \frac{145}{100} = 145x$
 New S.P. = 275x
 New profit = $275x - 145x = 130x$
 Required % = $\frac{130x}{275x} \times 100$
 $= \frac{520}{11} \% = 47 \frac{3}{11} \%$

52. (4) Total population visiting park in city C = 75,000
 Female population visiting park from city C = $75,000 \times \frac{(100-25)}{100} = 56,250$

53. (3) Let total male population in city C be 2x & total male population in city E be 3x
 Required percentage = $\frac{3x \times \frac{100}{24}}{2x \times \frac{100}{25}} \times 100$
 $= 156 \frac{1}{4} \%$

54. (3) Total population visiting park in city F
 $= 21000 \times \frac{60}{100} = 12,600$
 Total male population visiting park in city F
 $= 21,000 \times \frac{60}{100} \times \frac{40}{100} = 5040$
 Total population in city A visiting park
 $= 12600 \times 1.5 = 18,900$
 Required difference = $18,900 - 5040 = 13860$

55. (1) Total males visiting park in city B = 4,400
 So, total park visitor in city B = $\frac{4400}{22} \times 100 = 20,000$
 Male park visitor in city F = $\frac{4400}{2} = 2200$
 Total park visitor in city F = $\frac{2200}{40} \times 100 = 5500$
 Required percentage = $\frac{(5500-4400)}{5500} \times 100 = 20\%$

56. (2) Total males visiting park in city A be x
 \therefore total males visiting park in city E = 1.6x
 Atq,
 $x + 1.6x = 39000$
 $2.6x = 39000$
 $x = 15000$
 So, total females visiting park in city E
 $= 1.6 \times 15,000 \times \frac{76}{24} = 76,000$

57. (1) No. of ways = ${}^7C_5 \times {}^3C_2 = \frac{7 \times 6}{2 \times 1} \times 3 = 63$

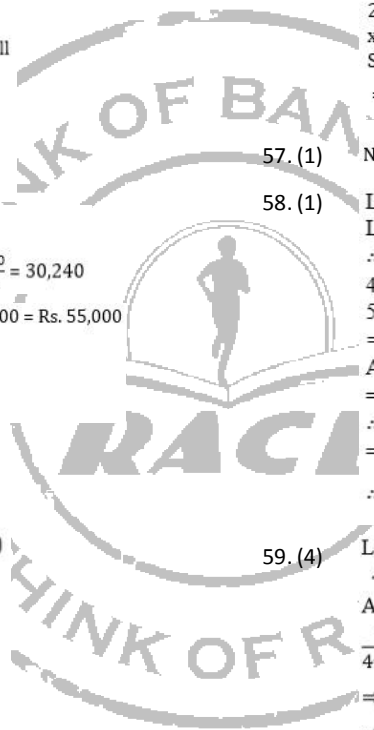
58. (1) Let length of slower train = ℓ_1
 Length of faster train = ℓ_2
 $\therefore \ell_1 + \ell_2 = (5x - 4x) \times 30$
 $4x = \text{speed of slower train}$
 $5x = \text{speed of faster train}$
 $= 30x$... (i)
 And, $\ell_2 = 5x \times 4$
 $= 20x$
 $\therefore \ell_1 = 30x - 20x$
 $= 10x$
 $\therefore \frac{\ell_1}{\ell_2} = \frac{10}{20} = \frac{1}{2}$

59. (4) Let speed of current = r km/h
 \therefore speed of boat in still water = 4r
 A/q,
 $\frac{45}{4r - r} + \frac{45}{4r + r} = 8$
 $\Rightarrow \frac{15 + 9}{r} = 8$
 $\Rightarrow r = 3$ km/h

60. (3) Sum = $\frac{4000 \times 100}{12.5 \times 4} = \text{Rs } 8000$
 $\therefore CI = 8000 \left[\left(1 + \frac{4}{100} \right)^2 - 1 \right]$
 $= 51 \times 12.8$
 $= \text{Rs } 652.8$

61. (1) Speed in km/h of slower bus
 $= 20 \times \frac{18}{5} = 72$ km/h
 Speed in km/h of faster bus
 $= 25 \times \frac{18}{5} = 90$ km/h
 \therefore Required time = $\frac{72 \times 2}{90 - 72}$
 $= 8$ h

62. (2) Total number of TV produced by B and D together
 $= 3850 + 2690 = 6540$
 Total number of AC produced by A and B together
 $= 3545 + 3265 = 6810$
 Required ratio = $\frac{6540}{6810} = \frac{218}{227}$



Grand Test – IRP-180714



63. (1) Total number of fridge produced by all the companies together
 = 2119 + 3065 + 1258 + 2028 + 3000
 = 11,470
 Required average = $\frac{11470}{5} = 2294$

64. (4) Number of TV produced by E that remains unsold = $\frac{40}{100} \times 3750 = 1500$
 Number of coolers produced by B that remains unsold = $1820 \times \frac{60}{100} = 1092$
 Required percent = $\frac{1092}{1500} \times 100 = 72.8\%$

65. (2) Total number of products produced by company C = 4839 + 3158 + 1258 + 1745 = 11,000
 Total number of products produced by company B = 3850 + 3265 + 3065 + 1820 = 12,000
 Required Difference = 12,000 - 11,000 = 1000

66. (5) Total number of TV produced by Company B and cooler produced by Company D together = 3850 + 1250 = 5100.
 Total number of Fridge produces by company E = 3000
 Required % = $\frac{5100-3000}{3000} \times 100 = 70\%$

67. (1) Total number of products produced by A = 9,503
 Total number of products produced by B = 12,000
 Total number of products produced by C = 11,000
 Total number of products produced by D = 8,100
 Total number of products produced by E = 10,955
 So, B has produced max. number of products.

68. (1) $? = \frac{25}{100} \times 480 + \frac{2}{3} \times 420 - \frac{25}{200} \times 640$
 = 120 + 280 - 80
 = 320

69. (2) $? = 28 + 7 \times 25 - 12$
 = 100 - 12
 = 88

70. (5) $? \times 5 = 361 + 1156 + 32 - 729$
 $\Rightarrow ? = \frac{820}{5}$
 $\Rightarrow ? = 164$

71. (4) $\frac{?}{10} = 15.48 + 4.484 - 11.81$
 $\Rightarrow ? = 8.154 \times 10 = 81.54$

72. (2) $? = 7018 + 7.07$
 = 7025.07

73. (4) Let the speed of boat in downstream be 5x km/hr
 And the speed of boat in upstream be 3x km/hr
 \therefore Speed of boat in still water = $\frac{5x+3x}{2} = 4x$ km/hr
 Speed of stream = $\frac{5x-3x}{2} = x$ km/hr
 ATQ,
 $\Rightarrow 3x = 6 \Rightarrow x = 2$
 Required time = $\frac{35}{10} + \frac{15}{6} = 6$ hours

74. (3) Let Amit borrowed Rs. x at 9% S.I. per annum
 ATQ,
 $\Rightarrow \frac{x \times 12 \times 2}{100} + \frac{(25000 - x) \times 9 \times 2}{100} = 30250 - 25000$
 $\Rightarrow \frac{12x}{50} + \frac{(25000 - x) \times 9}{50} = 5250$
 $\Rightarrow \frac{3x}{50} = 5250 - 4500$
 $\Rightarrow 3x = 750 \times 50$
 $\Rightarrow x = \text{Rs. } 12,500$

75. (5) $2050 \quad 719 \quad 376 \quad 251 \quad 224 \quad 216$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $-1331 \quad -343 \quad -125 \quad -27 \quad -8$
 $\uparrow \quad \uparrow \quad \uparrow \quad \uparrow \quad \uparrow$
 $11^3 \quad 7^3 \quad 5^3 \quad 3^3 \quad 2^3$

76. (5) $1200 \quad 240 \quad 96 \quad 57.6 \quad 46.08 \quad 46.08$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $\times 0.2 \quad \times 0.4 \quad \times 0.6 \quad \times 0.8 \quad \times 1$

77. (2) $33 \quad 40 \quad 56 \quad 97 \quad 187 \quad 358$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $+7 \quad +16 \quad +41 \quad +90 \quad +171$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $+(3)^2 \quad +(5)^2 \quad +(7)^2 \quad +(9)^2$

78. (3) $252 \quad 252 \quad 246 \quad 270 \quad 210 \quad 330$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $+0 \quad -6 \quad +24 \quad -60 \quad +120$
 $\uparrow \quad \uparrow \quad \uparrow \quad \uparrow \quad \uparrow$
 $1^3 - 1 \quad 2^3 - 2 \quad 3^3 - 3 \quad 4^3 - 4 \quad 5^3 - 5$

79. (2) $1186 \quad 592 \quad 294 \quad 144 \quad 68 \quad 29$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $\div 2 - 1 \quad \div 2 - 2 \quad \div 2 - 3 \quad \div 2 - 4 \quad \div 2 - 5$

80. (4) $55 \quad 82 \quad 53 \quad 80 \quad 51 \quad 78$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $+27 \quad -29 \quad +27 \quad -29 \quad +27$

