RPF (CONSTABLE) MOCK TEST – 8 (SOLUTION)

51. (B) ATQ,

Weight of third box = $\frac{250\times120}{100}$
= 300 gram

Weight of second box = $\frac{300\times125}{100}$
= 375 gram

Weight of fifth box = $\frac{400\times100}{64}$
= 625 gram

Required difference
$= \frac{625+400+375+300-400-375-300-250}{4}$
= 93.75 gram

52. (A) ATQ,
Total number of pass students
$= \frac{20\times25}{100}+\frac{30\times30}{100}+\frac{40\times35}{100}+\frac{60\times45}{100}+$
$\frac{80\times60}{100} = 5 + 9 + 14 + 27 + 48 = 103$

$\therefore$ Required percentage = $\frac{103}{230}\times100$
= 44.78%

53. (D) ATQ,

$\frac{89\times91\times94\times65\times237\times45}{42}$

$\Rightarrow \frac{5\times7\times10\times23\times27\times3}{42}$

$\Rightarrow \frac{50\times161\times81}{42} \Rightarrow \frac{8\times35\times39}{42}$

$\Rightarrow \frac{8(-7)\times(-3)}{42} \Rightarrow \frac{168}{42} = 4$

$\therefore$ Required remainder = 0

54. (A) HCF of (a^m-1) and $(a^n-1) = (a^{\text{HCF of m, n}} - 1)$
$\therefore (5^{125}-1)(5^{35}-1) = (5^5-1)$

55. (A) ATQ,

Total profit = $\frac{1200\times25}{100}$ = ₹ 300

Profit an 500 worth article = $\frac{500\times15}{100}$
= ₹ 75

$\therefore$ Required profit = $\frac{225}{700}\times100 = 32.14\%$

56. (B) Let the cost price of fruits = 100
(i) Profit = 20%

(ii) Cost price of 800 g fruits = $\frac{100\times800}{1000}$
= ₹ 80

Profit = $\frac{20}{80}\times100 = 25\%$

(iii) On adding 20% unusable fruits, then
his cost price = $\frac{100\times1000}{1200}$ = ₹ $83\frac{1}{3}$

$\therefore$ Profit = $\frac{16\frac{2}{3}}{83\frac{1}{3}}\times100 = 20$

(iv) Selling price = $\frac{100\times110}{100}$ = ₹ 110

Weight to sold = $\frac{1000\times90}{100}$ = 900 gram
$\therefore$ Cost price of 900 gram fruit
= $\frac{100}{1000}\times900$ = ₹ 90

$\therefore$ Total profit = $\frac{20}{90}\times100 = 22.22\%$
Hence, max profit is when he use 800 g of weight instead of 1 kg. ie = 25%

57. (A) Let Tarachand plans for x days
ATQ,

$\frac{480}{x}-\frac{480}{(x+6)} = 4$

$\Rightarrow \frac{480x+2880-480x}{x^2+6x} = 4$
$\Rightarrow x^2 + 6x - 720 = 0$
$\Rightarrow x^2 + 30x - 24x - 720 = 0$
$\Rightarrow x(x + 30) - 24(x + 30) = 0$
$\Rightarrow x = 24$
$\therefore$ Required number of days = 24

58. (B) ATQ,

A – 9 — 20
B – 12 — 15 — 180
C – 15 — 12

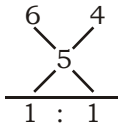
Work done till 12 pm = (20 × 3) + 15
= 75 unit
$\therefore$ Time taken to do the rest work
$= \frac{3\times180-75}{47} = \frac{465}{47} = 9\frac{42}{47}$

$\therefore$ Required time = $3 + 9\frac{42}{47} = 12\frac{42}{47}$ hr.

59. (C) ATQ,

	Water		Milk			
Ist	1	:	3	= 4	]	×2
2nd	1	:	1	= 2	]	×4
Final	3	:	5	= 8	]	×1

Now,



∴ Required amount of mixture from each can = $\frac{12}{2}$ = 6 litre

60. (D) Required amount of milk

$= 75\left(1-\frac{5}{75}\right)^3$

$= 75 \times \frac{14}{15}\times\frac{14}{15}\times\frac{14}{15}$

= 60.98 litres

61. (C) ATQ,

	A	:	B	:	C
Speed	6	:	3	:	1
Time	1	:	2	:	6

Now, 6 unit = $\frac{11}{4}$

∴ 2 unit = $\frac{11}{4}\times\frac{1}{6}\times 2$

∴ Required time = 55 min.

62. (D) A.T.Q.,

P + R = 39 .....(i)

and, 2P = 56 .....(ii)

On solving equation (i) and (ii),

2R = 22

∴ Required time = 22 min

63. (C) Let the time taken by A to cover 1 km = x sec.

Time taken by B = $(x + 25)$ sec.

and, time taken by C = $(x + 55)$ sec.

Now,

	A	C
Distance	1000	725
Time	29	40

Then, $\frac{A}{C} = \frac{29}{40} = \frac{x}{x+55}$

$\Rightarrow 11x = 1595$

∴ Time taken by A to cover 1 km = 145 sec = 2 min 25 sec.

64. (B) ATQ,

$12\% = \frac{12}{100} = \frac{3}{25}$

Amount = 6000

1st year = 720

2nd year = 720 + 86.4

3rd year = 720 + 86.4 + 86.4 + 10.37

∴ Compound interest = 3(720) + 3(86.4) + 10.37

Now, $\frac{2429.57\times 100}{2\times 4\times 10}$ = Amount

$\Rightarrow$ Required amount = ₹ 3036.96

65. (A) ATQ,

Amount = 8000

1st year = 800

2nd year = 960 + 96

3rd year = 1200 + 120 + 144 + 14.4

4th year = 1600 + 160 + 192 + 240 + 19.2 + 24 + 28.8 + 2.88

∴ Compound interest = ₹ 5601.28

66. (B) ATQ,

Distance covered in 40 revolutions

$= 2 \times \frac{22}{7}\times 35 \times 40 = 8800$ cm

∴ Speed of motorcycle = $\frac{8800\times 18}{100\times 10\times 5}$

= 31.68 km/hr

67. (D) Let the length of the garden = l

and, breadth of the garden = b

ATQ,

$2b + l = 32$

$\Rightarrow l = 32 - 2b$

Now, $l \times b = 120$

$\Rightarrow (32 - 2b) \times b = 120$

$\Rightarrow 32b - 2b^2 - 120 = 0$

$\Rightarrow b^2 - 16b + 60 = 0$

$\Rightarrow b^2 - 10x - 6x + 60 = 0$

$\Rightarrow (b - 10)(b - 6) = 0$

$\Rightarrow b = 6$ or $b = 10$

When b = 10, $l = 12$

When b = 6, $l = 20$

∴ Required dimension = 20 cm, 6 cm

68. (C) Let the number of hens = x

and, number of cows = y

ATQ,

$x + y = 54$ .....(i)

and, $2x + 4y = 160$

$x + 2y = 80$ .....(ii)

On solving equations (i) and (ii),

$x = 28$

∴ Required number of hens = 28

69. (D) Let the number = $100x + 10y + z$

ATQ,

$x + y + z = 10$ .....(i)

$y = x + z$ .....(ii)

and, $100z + 10y + z - 100x - 10y - z = 99$

$\Rightarrow z - x = 1$ .....(iii)

On solving equation (i) and (ii)
$2x + 2z = 10$
$\Rightarrow x + z = 5$ .....(iv)
On solving equation (iii) and (iv)
$\Rightarrow z = 3$
and, $x = 2$
$\therefore$ Required number
$= 100 \times 2 + 10 \times (3 + 2) + 3$
$= 253$

70. (D) $\left[\left(\left(\frac{1}{x}\right)^{\frac{1}{5}\times\left(\frac{3}{5}\right)}\right)^{\frac{-5}{3}}\right]^{-5} = \left[(x)^{\frac{1}{5}\times\frac{3}{5}\times\frac{5}{3}}\right]^{-5}$

$= \left(\frac{1}{x}\right)^{\frac{1}{5}\times 5} = x^{-1}$

71. (B) ATQ,
$3\sqrt{5} + 5\sqrt{5} = 25.8$
$\Rightarrow 8\sqrt{5} = 25.8$
$\Rightarrow \sqrt{5} = 3.225$
Now, $4\sqrt{5} + 6\sqrt{5} = 10\sqrt{5}$
$= 10 \times 3.225 = 32.25$

72. (B) Q P
9 min (upstream)
9 min (downstream)
Let the speed of the swimer = x
and, the speed of current = y
ATQ,

$\frac{9}{60}(x + y) - \frac{9}{60}(x - y) = \frac{180}{1000}$

$\Rightarrow \frac{9}{60}(x + y - x + y) = \frac{9}{50}$
$\Rightarrow 10y = 6$

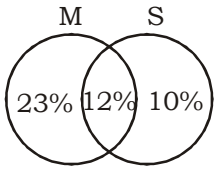
$\Rightarrow y = \frac{6}{10} = \frac{3}{5} = 0.6$ km/hr

73. (C) ATQ,
A – 25 → 8
B – 40 → 5
200
Work done in 2 hours = 8 + 5 = 13 unit
Work done in 30 hour = 13 × 15 = 195 unit

Time taken by A to do the rest work = $\frac{5}{8}$ hour

$\therefore$ Total time taken = $30\frac{5}{8}$ hours

74. (A) Failed in Mathematics = 100 – 65 = 35%
Failed in Science = 100 – 78 = 22%



Percentage of passed candidates
= 100 – (23 + 12 + 10) = 55%

$\therefore$ Total number of students = $\frac{165}{55} \times 100$
$= 300$

75. (A) ATQ,
Profit ratio of A, B and C
$= (12 \times 6000) : (8000 \times 4) + (10000 \times 8) : (8 \times 9000) + (4 \times 6000)$
$= 72000 : 112000 : 96000$
$= 9 : 14 : 12$
$\therefore$ Profit of A, B, C

$= \frac{66500}{35} \times 9, \frac{66500 \times 14}{35}, \frac{6650}{35} \times 12$
$= 17100, 26600, 22800$

76. (D) Let the average expenditure of all 12 = x
ATQ,
$12x = 11 \times 40 + x + 22$
$\Rightarrow 12x = 440 + x + 22$

$\Rightarrow x = \frac{462}{11} = 42$

$\therefore$ Total expenditure = 42 × 12 = ₹ 504

77. (C) Let the total income = 100
ATQ,

$\frac{(100 - x) \times 152}{100} = 125 - \frac{x \times 116}{100}$
$\Rightarrow 15200 - 152x = 12500 - 116x$
$\Rightarrow 2700 = 36x$
$\Rightarrow x = 75$

78. (B) Let the cost price of article = x

SP price of B = $\frac{x \times 120}{100} = \frac{6x}{5}$

Profit of A = $\frac{x}{5}$

Profit of B = $\frac{6x \times 130}{5 \times 100} - \frac{6x}{5}$

ATQ,

$\frac{9x}{25} - \frac{x}{5} = 104$
$\Rightarrow 4x = 104 \times 25$
$\Rightarrow 650$

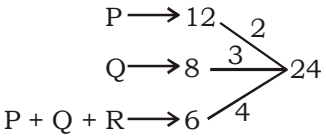
$\therefore$ Cost price of D = $\frac{650 \times 120 \times 130 \times 50}{100 \times 100 \times 100}$

= ₹ 507

79. (A) Fifth number
= (24.35)5 + (25.43)6 – (25.34)10
= 274.33 – 253.4
= 20.93

$\therefore$ Required average = $\frac{253.4 - 20.93}{9}$
= 25.83

80. (D) ATQ,



$\therefore$ Required time = $\frac{24}{3+2-4}$ = 24 hours

81. (A) Let the number of balls be $3x$, $7x$ and $11x$.
ATQ,
$7x - 3x = 4x$ = multiple of 6 and 8
LCM of (6,8) = 24
$\therefore$ we can say, $4x = 24$
$\Rightarrow x = 6$
Hence, the number of balls = $3x + 7x + 11x$
= $21x = 21 \times 6 = 126$

82. (B) Required ratio = $\frac{1600 \times 12}{100} : \frac{1600 \times 6}{100}$
= 2 : 1

83. (C) Required difference
$= 1600\left(\frac{16+42}{100}\right) - 1600\left(\frac{6+24}{100}\right)$
= 16 × 28 = 448

84. (A) Required average = $\frac{1600 \times (6+12+24)}{100 \times 3}$
= 224

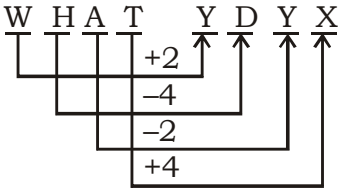
85. (A) Total increase
$= 1600\left[\left(\frac{42}{100} \times \frac{50}{100} + \frac{6 \times 50}{10 \times 100} + \frac{24 \times 25}{100 \times 100} + \frac{16 \times 25}{100 \times 100} + \frac{12 \times 75}{100 \times 100}\right)\right]$
= 628

$\therefore$ Required percentage = $\frac{628}{1600} \times 100$
= 39.25%

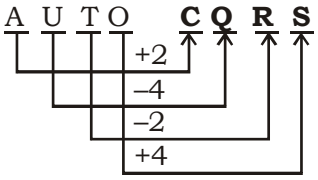
86. (C) The largest India is 7th largest area country. while **Australia** is the **6th** largest area.

87. (D) Sanitation keeps illness away whill care keps **accident** away.

88. (B) As,



Similarly,



89. (A) 4 + 7 + 6 $\Rightarrow (17)^2 = 289$
3 + 5 + 6 $\Rightarrow (14)^2$ = **196**

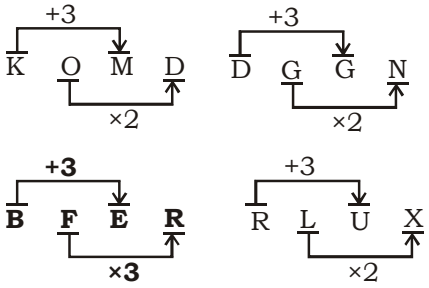
90. (A) As, $7^2 + 6^2 + 7 + 6 = 98$
Similarly, $8^2 + 9^2 + 8 + 9$ = **162**

91. (B) Except '**Brinjal**', all others are root vegitables

92. (D) 644 $\Rightarrow (4)^3 = 64$
1255 $\Rightarrow (5)^3 = 125$
6216 $\Rightarrow (6)^3 = 216$
5228 $\Rightarrow (8)^3$ = **512** $\neq$ **522**

93. (B) Except **Kho-Kho** all other games number of plays is 7. While in Kho-Kho number of players is 9.

94. (C)



95. (D) 24 – 9 = 15 (O)
16 – 7 = 9 (I)
11 – 3 = 8 (H)
21 – 4 = **17 (Q)** $\neq$ **(R)**

96. (A) $\frac{12+13+17}{3} = 14$

$\frac{19+11+18}{3} = 16$

$\frac{16+15+11}{3}$ = **14**

97. (B) 12 × 4 + 9 = 57
16 × 4 + 6 = 70
19 × 4 + 7 = **83**

98. (D)

99. (A) 54 Q 9 P 6 R 3 S 4
After changing the sings,
= 54 ÷ 9 – 6 + 3 × 4
= 6 – 6 + 12 = **12**

100. (B)

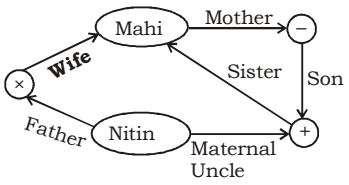
A	B	C	D	E
↓	↓	↓	↓	↓
3	**2**	**1**	**4**	**5**

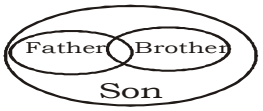
101. (A)
102. (C)
103. (B)

104. (B) −16 −8 −12 −6 **−9** −4.5
$\times\frac{1}{2}$ $\times\frac{3}{2}$ $\times\frac{1}{2}$ $\times\frac{3}{2}$ $\times\frac{1}{2}$

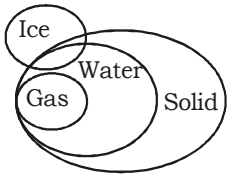
105. (C) 6 7 10 16 **26** 41
+1 +1+2 +1+2+3 +1+2+3+4 +1+2+3+4+5

106. (A) 18 × 3 = 54
18 × 6 = 108
6 × 4 = **24**

107. (D)


108. (D)


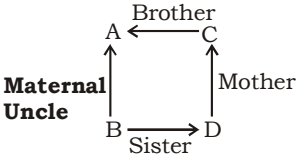
109. (C) ab**b**ccd/**a**b**b**c**c**d

110. (B)


I. ×
II. ×
So, neither conclusion (i) nor (ii) follows.

111. (B) $(3)^2 \times \sqrt{16} = 36$
$(4)^2 \times \sqrt{25} = 80$
$(5)^2 \times \sqrt{36} =$ **150**

112. (D) (3 + 6) × (2 + 5) = 63
(5 + 4) × (4 + 9) = 117
(4 + 8) × (1 + 6) = **84**

113. (C)


114. (D)
115. (A)
116. (A) Let salary = ₹ x

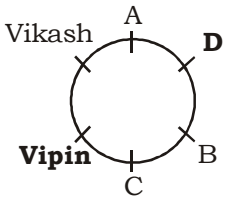
Then, tips = $\frac{3}{2}x$

Total income = $x + \frac{3}{2}x$

$= \frac{5x}{2}$

$\therefore$ Required fraction = $\frac{3}{2}x \times \frac{2}{5x} = \frac{3}{5}$

117. (C)
118. (B)
119. (B)

120. (B)


Answer key

1. (B)	16. (A)	31. (C)	46. (A)	61. (C)	76. (D)	91. (B)	106.(A)
2. (C)	17. (B)	32. (B)	47. (B)	62. (D)	77. (C)	92. (D)	107.(D)
3. (D)	18. (A)	33. (D)	48. (C)	63. (C)	78. (B)	93. (B)	108.(D)
4. (A)	19. (C)	34. (B)	49. (C)	64. (B)	79. (A)	94. (C)	109.(C)
5. (A)	20. (D)	35. (A)	50. (D)	65. (A)	80. (D)	95. (D)	110.(B)
6. (C)	21. (A)	36. (D)	51. (B)	66. (B)	81. (A)	96. (A)	111.(B)
7. (B)	22. (B)	37. (A)	52. (A)	67. (D)	82. (B)	97. (B)	112.(D)
8. (B)	23. (C)	38. (A)	53. (D)	68. (C)	83. (C)	98. (D)	113.(C)
9. (C)	24. (A)	39. (B)	54. (A)	69. (D)	84. (A)	99. (A)	114.(D)
10. (D)	25. (C)	40. (B)	55. (A)	70. (D)	85. (A)	100.(B)	115.(A)
11. (C)	26. (A)	41. (A)	56. (B)	71. (B)	86. (C)	101.(A)	116.(A)
12. (C)	27. (A)	42. (C)	57. (A)	72. (B)	87. (D)	102.(C)	117.(C)
13. (B)	28. (A)	43. (D)	58. (B)	73. (C)	88. (B)	103.(B)	118.(B)
14. (B)	29. (D)	44. (B)	59. (C)	74. (A)	89. (A)	104.(B)	119.(B)
15. (C)	30. (A)	45. (C)	60. (D)	75. (A)	90. (A)	105.(C)	120. (B)