RPF (CONSTABLE) MOCK TEST – 7 (SOLUTION)

51. (B) Let the total number of men = x
and, the initial average = y
A. T. Q.,
$xy - 18 = x(y + 6) - 42$
$\Rightarrow xy - 18 = xy + 6x - 42$
$\Rightarrow x = 4$

52. (C) LCM of 15, 20, 28 and 30
$= 2 \times 2 \times 3 \times 5 \times 7$
As troops are in also perfect square.
$\therefore$ Total number of soldiers
$= 2 \times 2 \times 3 \times 5 \times 7 \times 3 \times 5 \times 7 = 44100$

53. (D) $5^{8n} - 4^{8n}$
For $n = 1$
$= 5^{8(1)} - 4^{8(1)} = (5^4)^2 - (4^4)^2$
$= (5^4 - 4^4)(5^4 + 4^4)$
$= (625 - 256)(625 + 256)$
$= 369 \times 881 = 41 \times 9 \times 881$

54. (D) Required numbers = 10, 17, 24 94
Total two digits numbers = 13
$\therefore$ Required sum
$= \frac{n}{2}[2a + (n-1)d]$
$= \frac{13}{2}(2 \times 10 + 84) = 676$

55. (B) L.C.M. × H.C.F. = Product of two numbers
$\therefore$ Second number = $\frac{2232 \times 2}{62} = 72$

56. (A) Total cost price
$= 4 \times 90 + 80 \times 5 + 70 \times 6$
$= 360 + 400 + 420$
$= ₹1180$
Selling price = $\frac{1180 \times 160}{100} = ₹1888$
$\therefore$ Required selling price = $\frac{1888}{15}$
$= ₹125.87/kg$

57. (A) Let the price of any article = 100
Required single discount
$= 100 - \frac{100 \times 80 \times 70 \times 60}{100 \times 100 \times 100}$
$= 66.4\%$

58. (A) Let the initial cost price = 100
Initial selling price = $\frac{100 \times 20}{100}$
$= 120$
Now, New selling price = $\frac{120 \times 125}{100}$
$= 150$
Let the cost price = x
A.T.Q.
$\frac{x \times 125}{100} = 150$
$\Rightarrow x = 120$
$\therefore$ Increase percentage = 20%

59. (B) A.T.Q.
Work done in three days = $\frac{3}{4}$ of the work
$\left(1 - \frac{3}{4}\right)$ of the work is completed by A in 3 days.
$\therefore$ A can completed the whole work = 3 × 4
= 12 days
Now,

$$\begin{matrix} A + B - 4 \\ A - 12 \end{matrix} \diagdown\!\!\diagup \begin{matrix} 3 \\ 1 \end{matrix} \Big\rangle 12$$

B can completed the work = $\frac{12}{(3-1)} = 6$ days

60. (C) Let the number of workers initiality = x
A.T.Q.,
$x \times 8 \times 60 = (x + 10) \times 9 \times 50$
$\Rightarrow 16x = 15x + 150$
$\Rightarrow x = 150$

61. (D) Let the quantity of water to be mixed = x kg
and, cost price of 1 kg pure milk = ₹1
$\therefore$ Profit % = $\frac{x \times 100}{60}$
$\Rightarrow 20 = \frac{x \times 5}{3} \Rightarrow x = 12$

62. (C) $0.343434..... = 0.\overline{34} = \frac{34}{99}$

63. (C) ATQ,
$\frac{2}{3} = 0.67$
$\frac{4}{5} = 0.80$
$\frac{5}{6} = 0.83$

$\frac{5}{7} = 0.714$

$\frac{3}{5} = 0.60$

$\therefore$ Required order = $\frac{5}{6} > \frac{4}{5} > \frac{5}{7} > \frac{2}{3} > \frac{3}{5}$

64. (A) $\frac{489.1295 \times 0.0489 \times 1.986}{0.0893 \times 92.681 \times 99.749}$

$= \frac{489 \times 0.05 \times 2}{0.09 \times 93 \times 100} = \frac{489}{9 \times 93 \times 100}$

$= 0.058 \approx 0.06$

65. (C) Let the length of the train = x m
ATQ,

$\frac{x + 480}{37} = \frac{480}{16}$

$\Rightarrow x + 480 = 1110$

$\Rightarrow x = 1110 - 480 = 630$

66. (B) Let the length of faster train = x m
A.T.Q,

$\frac{x \times 18}{(60 - 45) \times 5} = 24 \Rightarrow \frac{18x}{75} = 24 \Rightarrow x = 100$

67. (A) Let the amount = 100

$\therefore$ Required rate = $\frac{80 \times 100}{100 \times 6} = \frac{40}{3}\%$

Now, $\frac{40}{3}\% = \frac{40}{300} = \frac{2}{15}$

Now, Amount - 27000
Ist year – 3600
IInd year– 3600 + 480
IIIrd year – 3600 + 480 +480 + 64
IVth year – 3600 + 480 + 480 + 480 + 64 +64 +64 + 8.53

$\therefore$ Required Compoud interest = ₹17544.53

68. (B) Let the numbers are x and y
ATQ,

$\frac{x \times 20}{100} + \frac{x \times 40}{100} = 25\left(\frac{x + y}{100}\right)$

$\Rightarrow 20x + 40y = 25x + 25y$

$\Rightarrow 5x = 15y \Rightarrow x : y = 3 : 1$

69. (C) Let the length of reactangle = x
and, Breadth = y
A.T.Q.

$\sqrt{x^2 + y^2} = \sqrt{61}$

$\Rightarrow x^2 + y^2 = 61$

and, $(x + y)^2 - 2xy = 61$

$\Rightarrow (x + y)^2 = 61 + 60 = 121 \Rightarrow x + y = 11$

$\therefore$ Required perimeter = 11 × 2 = 22 cm

70. (B) Let the actual side of square = 100

$\therefore$ Required error = $\frac{(104)^2 - (100)^2}{(100)^2} \times 100$

$= \frac{816}{100} = 8.16\%$

71. (C) Let the speed of boat = x km/hr
and, the speed of stream = y km/hr
A.T.Q,

$\frac{24}{x + y} = 3 \Rightarrow x + y = 8$ ...(i)

and, $\frac{24}{x - y} = 6 \Rightarrow x - y = 4$ ...(ii)

On solving eq(i) and eq(ii)
$2x = 12 \Rightarrow x = 6$

$\therefore$ Required time = $\frac{72}{2}$ = 12 hours.

72. (C) Let the total distance = x km
ATQ

$\frac{x}{10} - \frac{x}{15} = 2 \Rightarrow \frac{3x - 2x}{30} = 2 \Rightarrow x = 60$

Time taken when he travels at the speed of 10 km/hr = $\frac{60}{10}$ = 6 hours

$\therefore$ Required speed = $\frac{60}{(6 - 1)}$ = 12 km/hr

73. (A) Let the average age of the team = x years
ATQ

$11x - 26 - 29 = 9\ (x - 1)$

$\Rightarrow 11x - 9x = 26 + 29 - 9$

$\Rightarrow x = 23$

74. (D) Ratio of shares initially

$= \frac{7}{2} : \frac{4}{3} : \frac{6}{5} = 105 : 40 : 36$

Ratio of their profits

$= \left(105 \times 4 + \frac{105 \times 150}{100} \times 8\right) : 40 \times 12 : 36 \times 12$

$= (420 + 1260) : 480 : 432$

$= 35 : 10 : 9$

$\therefore$ Share of B = $\frac{21600}{54} \times 10$ = ₹4000

75. (A) Total Amount in first year

$6000 \times \frac{6000 \times 5}{100}$ = ₹6300

Principal for second year
= 6300 – 2100 = ₹4200
∴ Total amount for second year

$$= 4200 + \frac{4200 \times 5}{100} = ₹4410$$

Principal for third year = 4410 –2100
= 2310

$$\text{Required amount} = 2310 + \frac{2310 \times 5}{100}$$

= ₹2425.5

76. (A) ATQ,
$2x + 3x + 5x = 180° - 45°$
$\Rightarrow 10x = 135°$
$\Rightarrow x = 13.5°$
∴ Value of gratest angle

$$= (13.5° \times 5 + 15) \times \frac{\pi}{180} \text{ radian}$$

$$= \frac{11\pi}{24} \text{ radian}$$

77. (A) ATQ,
30% = 60
100% = 200

∴ Cloth purchased = $\frac{200}{25}$ = 8 m

78. (B) $$\frac{a^2 - 2a + 1}{a^2 + 2a + 1} = \frac{a - 2 + \frac{1}{a}}{a^2 + 2 + \frac{1}{a}}$$

$$= \frac{3-2}{3+2} = \frac{1}{5}$$

79. (B) $$\sqrt{1 + \sqrt{3 + \sqrt{3 + \sqrt{1089}}}}$$

$$= \sqrt{1 + \sqrt{3 + \sqrt{3 + 33}}}$$

$$= \sqrt{1 + \sqrt{3 + 6}}$$

$$= \sqrt{1 + 3} = 2$$

80. (A) Let the fourth proportional = x
A.T.Q.

$$\frac{135}{175} = \frac{81}{x} \Rightarrow 135x = 81 \times 175$$

$$\Rightarrow x = \frac{81 \times 175}{135} = 105$$

81. (D) Total number of students who get marks between 20 and 45 = 10 + 35 + 25 + 40 + 20 = 130

82. (B) Number of students who failed in English = 5 + 15 + 10 + 35 = 65

83. (C) Total number of the students in the class = 5 + 15 + 10 + 35 + 25 + 40 + 20 + 5 = 155

84. (B) Required percentage = $\frac{90}{155} \times 100$

$$= 58\frac{2}{31}\%$$

85. (B) Required percentage = $\frac{130}{155} \times 100$
= 83.87%

86. (C) As, Virus is the cause of disease.
Similarly, War is the cause of **distruction**.

87. (B) As, $(33)^2 - (30)^2 = 189$
Similarly, $(55)^2 - (54)^2$ = **109**

88. (A) As, $(6)^3 + 6 = 222$
Similarly, $(8)^3 + 8$ = **520**

89. (D) As, D O C T O R F M E R Q P
(+2, –2, +2, –2, +2, –2)

Similarly, C I R C L E **E G T A N E**
(+2, –2, +2, –2, +2, –2)

90. (B) As, R A W C L H
(+11, +11, +11)

Similarly, F B I **Q M T**
(+11, +11, +11)

91. (D) Except **Rangoon**, all others are the cities of India.

92. (C) M P V C F L
(+3, +6, +3, +6)
I K O G J P
(+2, +6, +3, +6)

93. (A) Except **EDF**, the sum of digits values of the letters is 13.

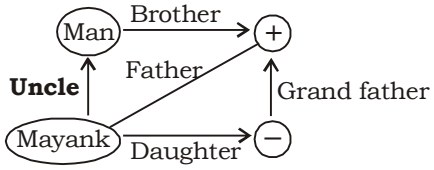
94. (D) Except **28 @ 5**, product of all others is 168.

95. (B) Except 2956, in all others sum of second and last digit is twice of the sum of first and third digit.

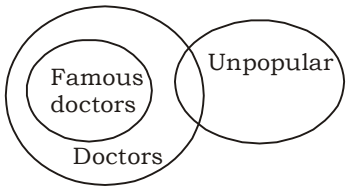
96. (A) As, 3 + 6 +1+ 8 +3+7 = 28
and, 4 + 2+ 2 +1+ 6 + 5 = 20
Similarly, 8 +1+ 2 + 9 + 7+2 = **29**

97. (A) As, 16 × 3 – 4 = 44
and, 41 × 3 – 6 = 117
Similarly, **37** × 3 – 5 = 106

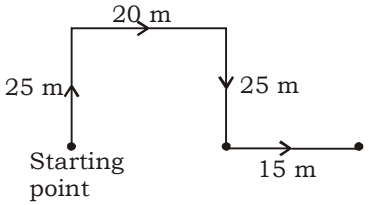
98. (C)
99. (D)
100. (A) $80 \times 16 + 4 - 9 \div 120$
After changing the signs.
according to questions,
$80 + 16 \div 4 \times 9 - 120$
$= 80 + 4 \times 9 - 120$
$= 80 + 36 - 120 = -4$
101. (B)
102. (D)
103. (C)
104. (A) 7 , 25 , 105 , 531 , **3193**
×3+4 ×4+5 ×5+6 ×6+7
105. (B) 1 , 5 , 14 , 57 , 170 , **681**
×4+1 ×3–1 ×4+1 ×3–1 ×4+1
106. (A) Ist – 5
2nd – 5 +1 = 6
3rd – 6 + 5 =11
4th – 11+1 = 12
5th – 11+ 6 = 17
6th – 17 +1 = 18
7th – 11+12 = **23**
107. (D)



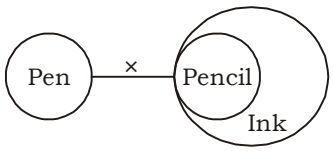
108. (B)



109. (C) b**b**cc**a**a/c**c**a**a**bb/aa**b**
110. (A) As, $\frac{8 \times 9}{2 \times 3} = 12$
and, $\frac{7 \times 6}{1 \times 7} = 6$
Similarly, $\frac{8 \times 4}{2 \times 2} =$ **8**
111. (A) As, $|8-2| \times |3-2| \times |4-1| = 18$
and, $|7-2| \times |9-4| \times |2-1| = 25$
Similarly, $|6-2| \times |4-3| \times |2-1| =$ **4**
112. (A) Total marks scored by 5 students
$= 38 \times 5 = 190$
Let marks scored by E = x
$\therefore$ marks scored by C = $x + 6$
and, marks scored by A = $x + 9$
marks scored by B = $x + x + 6 = 2x + 6$
marks scored by D = 112 – B
$= 112 - 2x - 6 = 106 - 2x$
$\therefore$ Total marks = $x + 9 + 2x + 6 + 106 - 2x + x + 6 + x = 190$
$\Rightarrow 3x + 127 = 190$
$\Rightarrow 3x = 63$
$\Rightarrow x = 21$
$\therefore$ Marks scored by A = 29 + 9 = **30**
113. (C)



Hence, He is **35 m East** from the starting point.
114. (A)



$\therefore$ Only conclusion I follows.
115. (C)
116. (A)
117. (B)
118. (C) **Chinu** – Sonu – Monu – Anu – Seenu
119. (B)
120. (A)

Answer key

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