RPF MOCK TEST – 9 (SOLUTION)

51. (B) % change = $\frac{R}{100 \pm R} \times 100\%$

Required fraction = $\frac{60}{(100+60)} = \frac{3}{8}$

52. (D) Let CP of article = 100
Profit % = 30%

CP of article = $\frac{8840 \times 100}{130}$ = ₹ 6800

∴ Lebel price of article = $\frac{6800 \times 100}{85}$
= ₹ 8000

53. (A) Let CP of first cycle = x
ATQ,

$\frac{x \times 124}{100} + \frac{(2400-x) \times 116}{100} - \frac{x \times 116}{100}$

$- \frac{(2400-x) \times 124}{100} = 24$

$\Rightarrow 124x + 278400 - 116x - 116x - 297600 + 124x = 2400$
$\Rightarrow 16x = 19200 + 2400$
$\Rightarrow x = 1350$
∴ Cost price of second cycle = 1600 – 1350
= ₹ 1050
∴ Required difference = 1350 – 1050 = ₹ 300

54. (C) CP of motor car = ₹ 24,600

MP of motor car = ₹ 24,600 × $\frac{100}{82}$
= ₹ 30,000
After successive discount, CP

= 30,000 × $\frac{92}{100} \times \frac{88}{100}$ = ₹ 24288

55. (A) Let the numbers x and y.
ATQ,
$6y - x = 129$ .....(i)
$y + 7x = 86$ .....(ii)
On solving equation (i) and (ii),
$x = 9$ and $y = 23$
∴ Required difference = 23 – 9 = 14

56. (C) Remaining amount
= 52,000 – (9000 + 27000)
= ₹ 14000
ATQ,

$\frac{9000}{100} \times \frac{20}{3} \times 1 + \frac{27000 \times 25}{100 \times 3} \times 1 +$

$\frac{14000 \times R}{100} = 4600$

$\Rightarrow \frac{180000}{300} + \frac{675000}{300} + \frac{14000R}{100} = 4600$

$\Rightarrow \frac{14000R}{100} = 4600 - 2850$
$\Rightarrow 140R = 1750$

Hence, Required rate = $12\frac{1}{2}\%$

57. (C) $1 \xrightarrow[\text{times}]{6 \text{ years}} 2 \xrightarrow[\text{times}]{6 \text{ years}} 4 \xrightarrow[\text{times}]{6 \text{ years}} 8$

58. (C) ATQ,

$25\% = \frac{25}{100} = \frac{1}{4}$

Let principal – 1000
First years = 250
second years = 250 + 62.5
Now, 22.5 unit = 62.5

∴ Principal = $\frac{525}{62.5} \times 1000$ = ₹ 8400

Now, Interest is half-yearly

then, rate = $12\frac{1}{2}\%$

and, time = 4 years

$12\frac{1}{2}\% = \frac{25}{200} = \frac{1}{8}$

Now, Principal = 8400
1st year = 1050
2nd year = 1050 + 131.25
3rd year = 1050 + 131.25 + 131.25 + 16.41
4th year = 1050 + 131.25 + 131.25 + 131.25 + 16.41 + 16.41 + 16.41 + 2.05
∴ Required difference = ₹ 445

59. (D) ATQ,
SP of the mixture = ₹ 30

CP of the mixture = 30 × $\frac{100}{120}$ = ₹ 25
Ratio of water to chemical = 36 – 25 : 25
= 11 : 25

60. (B) ATQ,

$\frac{6x}{10} + \frac{5x}{4} + \frac{3x}{2} = 268$

$\Rightarrow \frac{12x + 25x + 30x}{20} = 268$

$\Rightarrow x = 80$
∴ 25 paise coins are = 80 × 5 = 400

61. (B) $(3+\sqrt{2}) : \quad x : (12-\sqrt{32})$

a : b : c

mean propertion

$b^2 = a \times c$

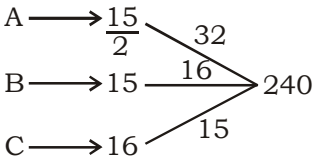
$= \sqrt{(3+\sqrt{2})\times(12-\sqrt{32})}$

$= \sqrt{(3+\sqrt{2})\times(12-4\sqrt{2})\sqrt{28}} = 2\sqrt{7}$

62. (D) A can do the work in $\frac{5\times3}{2} = \frac{15}{2}$ day

B complete 1work in $= \frac{9\times5}{3} = 15$ days

C complete work in $= 8 \times \frac{2}{1} = 16$ days



A + B + C one day work = 63 units

$\Rightarrow$ They will complete the whole work

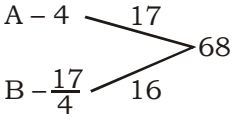
in $= 3+\frac{240-(63\times3)}{15} = 6\frac{2}{5}$ days

63. (C) Let additional men be x

$\frac{35\times27}{\frac{1}{3}} = \frac{(27+x)\times9}{\frac{2}{3}}$

$\Rightarrow x = 183$

64. (B)



Hence, leakage will empty the fully filled

tank $= \frac{68}{1} = 68$ hrs

65. (A) Let total capacity = 42 units

$\therefore$ (A + B + C) per hour work $= \frac{42}{6}$

$= 7$ units

A + B $= \frac{28}{7} = 4$ units/hr

$\therefore$ C can alone fill the cistern in $= \frac{42}{(7-4)}$

$= 14$ hrs.

66. (D) Difference of the length of the objects which is crossed by train and the result is divided by difference of time

Speed of train $= \frac{(230-140)}{(23-18)} = 18$ m/s

$= 18 \times \frac{18}{5} = 64.8$ km/hr

67. (D) Relative speed of the two trains

$= (62 + 46) \times \frac{5}{18} = 30$ m/s

and, Distance travelled in 14 sec. at 30 m/s = 30 × 14 = 420 m

Length of first train = $420 \times \frac{2}{3} = 280$ m

Distance travelled by first train in 54 sec

$= 62 \times \frac{5}{18} \times 54 = 930$ m

Length of platform = 930 – 280 = 650 m

68. (C) Let distance = x km

ATQ,

$\frac{x}{28} + \frac{x}{12} = 5$

$\Rightarrow \frac{3x+7x}{84} = 5$

$\Rightarrow 10x = 84 \times 5$

$\Rightarrow x = \frac{84\times5}{10} = 42$ km

69. (D) As we know

$(x, y) = \left(\frac{m_1x_2+m_2x_1}{m_1+m_2}, \frac{m_1y_1+m_2y_1}{m_1+m_2}\right)$

$\Rightarrow \left(\frac{24}{7}, 2\right) = \left(\frac{7\times2+2\times5}{2+5}, \frac{6\times5+2\times y}{2+5}\right)$

On comparison the value of y coordinate

$\Rightarrow \frac{30+2y}{7} = 2 \Rightarrow y = -8$

70. (C) Let the number of friend's in begining = x

ATQ,

$\frac{117}{(x-4)} - \frac{117}{x} = 4$

$\Rightarrow \frac{117x-117x+468}{x(x-4)} = 4$

$\Rightarrow 117 = x^2 - 4x$

$\Rightarrow x^2 - 13x + 9x - 117 = 0$

$\Rightarrow (x-13)(x+9) = 0$

$\Rightarrow x = 13$

$\therefore$ Required number = 13 – 4 = 9

71. (D) ATQ,

$\left(\frac{2}{3}\times\frac{13}{4}\right) - \frac{3}{4} \times \left(\frac{9}{4}-\frac{5}{3}\right)$

$= \left(\frac{2}{3}\times\frac{13}{4}\right) - \frac{3}{4} \times \left(\frac{27-20}{12}\right)$

$= \frac{13}{6} - \frac{3}{4} \times \frac{7}{12}$

$= \frac{13}{6} - \frac{7}{16} \Rightarrow \frac{104-21}{48} = \frac{83}{48}$

72. (B) We know that,
$a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$

$= \frac{1}{2}(a + b + c)[(a - b)^2 + (bc)^2 + (c - a)^2]$

$= \frac{1}{2}(53 + 55 + 57)[(-2)^2 + (-2)^2 + (4)^2]$

$= 1320$

73. (A) We know that,

$x + \frac{1}{x} = 1$

$\therefore x^3 + 1 = 0$

$\Rightarrow x = -1$

$\therefore x^{53} + \frac{1}{x^{53}} = (-1)^{53} + \frac{1}{(-1)^{53}} = -2$

74. (A) ATQ,

$$= 2 + \cfrac{1}{1 + \cfrac{2}{2 + \cfrac{3}{3 + \cfrac{2}{5}}}}$$

$$= 2 + \cfrac{1}{1 + \cfrac{2}{2 + \cfrac{15}{17}}}$$

$$= 2 + \cfrac{1}{1 + \cfrac{34}{49}}$$

$= 2 + \frac{49}{83} = \frac{215}{83}$

75. (A) It is possible when there are 5 sundays in the month starting from 2 of that month. In that case of 3 even dates will be sunday on 2, 9, 16, 23, 30. So, 17 will be monday

76. (D) Let the average expenditure = ₹ x
ATQ,
$\Rightarrow 45 \times x + 45 = 54(x - 1)$
$\Rightarrow 45x + 45 = 54x - 54$
$\Rightarrow 9x = 99$
$\Rightarrow x = 11$
$\therefore$ Initial expenditure = 45×11 = ₹ 495

77. (A) Let the present age of son = x years
and, the father's age = $4x + 4$
ATQ,
$3(x + 4) + 12 = 4x + 4 + 4$
$\Rightarrow 3x + 12 + 12 = 4x + 8$
$\Rightarrow 3x + 24 = 4x + 8$
$\Rightarrow x = 16$
$\therefore$ Father's present age = $4x + 4$
$= 4 \times 16 + 4 = 68$ years

78. (A) Let fraction is $\frac{x}{y}$
ATQ,
$\therefore \frac{x - 4}{y + 1} = \frac{1}{6}$
$\Rightarrow 6x - 24 = y + 1$
$\Rightarrow 6x - y - 25 = 0$ .....(i)

Again, $\frac{x + 2}{y + 1} = \frac{1}{3}$
$\Rightarrow 3x + 6 = y + 1$
$\Rightarrow 3x - y + 5 = 0$ .....(ii)
On solving equation (i) and (ii),
and, $y = 35$

$\therefore \frac{x}{y} = \frac{10}{35} = \frac{2}{7}$
$\therefore$ Required LCM
$= 2 \times 7 = 14$

79. (A) Greatest prime number = 199
Least prime number 2
$\therefore$ Required difference = 199 – 2 = 197

80. (B) ATQ,
$R + r = 15$
$\Rightarrow (R + r)^2 = 225$
$\Rightarrow R^2 + r^2 + 2Rr = 225$
$\Rightarrow R^2 + r^2 = 225 - 2Rr$

and, $\frac{4}{3}\pi R^3 + \frac{4}{3}\pi r^3 = 1760$

$\Rightarrow R^3 + r^3 = \frac{1760 \times 3 \times 7}{22 \times 4}$
$\Rightarrow (R + r)(R^2 + r^2 - Rr) = 420$
$\Rightarrow 15 \times (225 - 2Rr - Rr) = 420$
$\Rightarrow 225 - 3Rr = 28$
$\Rightarrow 3Rr = 225 - 28 = 197$

$\Rightarrow Rr = \frac{197}{3} = 65\frac{2}{3}$

81. (B) Radius of semi-circular sheet = r

$\Rightarrow \frac{28}{2}$

r = 14 cm
Circumference of sheet = πr
$= 14\pi$ cm
Sheet is folded to form a cone
Let radius of cone = r_1
$\therefore$ The circumference of base of cone
$\Rightarrow$ Circumference of sheet
$\therefore 2\pi r_1 = 14\pi$
$r_1 = 7$ cm
$\therefore$ radius of cone = 7 cm
slant height = radius of semi-circular sheet r = 14 cm

$\therefore$ height $\sqrt{(14)^2 - (7)}$

$= \sqrt{147} = 12$ cm (approx)

82. (B) Average number of people car service for all the years

$= \frac{20+25+10+35+25}{5} = 23000$

83. (C) Required ratio
= 20 : 15 = 4 : 3

84. (A) Required percentage = $\frac{40}{50} \times 100 = 80\%$

85. (A) Required percentage = $\frac{15}{75} \times 100 = 20\%$

86. (B) World Women's Day is celebrated on 8 March while Teacher's day is celebrated on **5 september.**

87. (B) As, M A R C H → A M H C R

Similarly, G O E S → O G S E

88. (D) As, $(2)^2 \Rightarrow (2)^5$
Similarly, $(4)^2 \Rightarrow (4)^5$ = **1024**

89. (A) As, $818 \Rightarrow (2)^3 18 \Rightarrow \sqrt{18-2} = 4$

Similarly, $126 \Rightarrow (1)^3 26 \Rightarrow \sqrt{26-1}$ = **5**

90. (A) As, $(19)^3 - (19)^2 = 6018$
Similarly, $(17)^3 - (17)^2$ = **4624**

91. (B) W U X E (−2 +3 +7) **J R D N (+8 +12 +10)**

B E A F (+3 −4 +5) P Q S N (+1 +2 −7)

92. (D) Expect **Rahul Gandhi,** all were the prime ministers of India.

93. (A) Except **41 – 72**, in all others second number is divisible by the sum of digits of first number.

94. (D) Except **Pannalal Gosh**, all there are associated with tabla while Pannalal Gosh associated with flute.

95. (D) Except **6354**, sum of digits of all others is odd.

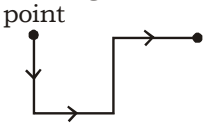
96. (B) 4 × 1 = 4
4 × 2 = 8
8 × 3 = 24
24 × 4 = 96
96 × 5 = 480
480× 6 = **2880**
2880 × 7 = 20160

97. (B) 7 + **8** = 15 ⇒ 15 – 2 = 13 (left)
⇒ 15 + 1 = 16 (right)
13 + 16 = 29 ⇒ 29 – 2 = 27 (left)
⇒ 29 + 1 = 30 (right)
27 + 30 = 57 ⇒ 57 – 2 = 55 (left)
⇒ 57 + 1 = 58 (right)

98. (B)

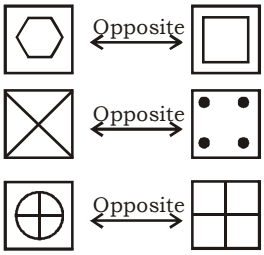
99. (D)

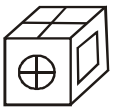
100. (A) Starting point



In **east** direction

101. (D) From figure,



∴  can't be made by the question figure.

102. (A)

103. (D)

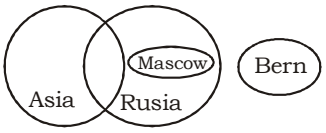
104. (A) 692, 721, 761, 814, **884**
(+29 +40 +53 +70)
(+11 +13 +17)

105. (B) 3 × 2, 4 × 6, 5 × 12, 6 × 20, 7 × 30, **8 × 42**
(+4 +6 +8 +10 +12)
(+1 +1 +1 +1 +1)

106. (D) $2^3 + 2 = 10$
$3^3 - 2 = 25$
$4^3 + 2 = 66$
$5^3 - 2 = 123$
$6^3 + 2$ = **218**

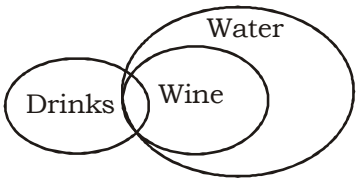
107. (A) Last day of the year would be **sunday**.

108. (B)



109. (D) a**c**ca/**a**ba**b**/ac**c**a/**a**b

110. (A)



I. ✓

II. ×

Hence, only conclusion I follows.

111. (D) As, $(8)^3 - 7 = 505$

and, $(6)^3 - 5 = 211$

Similarly, $(11)^3 - 9 =$ **1322**

112. (A) All are starting letter of days of week.

So, next will be **S**.

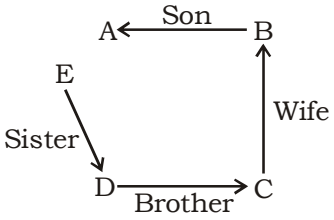
113. (B)

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

114. (D)

115. (D)

116. (D)



117. (D)

118. (A) Letters represent the girls who are Doctor = **A, B, C**

119. (C) 11 rectangles

120. (D)

Answer key

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

Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003

Note:- Whatsapp with Mock Test No. and Question No. at 7053606571 for any of the doubts, also share your suggestions and experience of Sunday Mock

Note:- If you face any problem regarding result or marks scored, please contact 9313111777