

RPF (CONSTABLE) MOCK TEST – 10 (SOLUTION)

51. (C) LCM of 42, 63 and 96 = 2016

$$\therefore \text{Required time} = \frac{2016}{60} = 33 \text{ min. } 36 \text{ sec}$$

52. (C) Let the unit place digit = x
and, ten's place digit = y
ATQ,

$$10x + y - 10y - x = 9x - 9y - 9(x - y)$$

Hence, it is always divisible by 3 and 9.

53. (A) Let the greatest number = x
and, smaller number = y
ATQ,

$$xy = 777 \quad \dots\dots\dots (i)$$

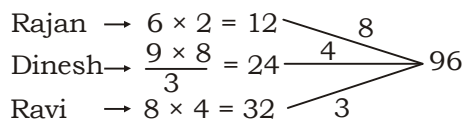
$$\text{and, } x + y = x - y + 42$$

$$\Rightarrow y = 21$$

$$\therefore x = \frac{777}{21} = 37$$

$$\therefore \text{Greater number} = 37$$

54. (B) ATQ,



$$\therefore \text{Required time} = \frac{96}{15} = 6 \frac{2}{5} \text{ hours}$$

55. (A) Let the cost price = 100
ATQ,

$$\text{Market price} = \frac{100 \times 160}{100} = 160$$

$$\text{Selling price} = \frac{160 \times 60}{100} = 96$$

\therefore He occurs loss of 4%

56. (A) ATQ,

$$A : B = \frac{1}{4} : \frac{1}{5} = 5 : 4$$

$$B : C = \frac{1}{3} : \frac{1}{5} = 5 : 3$$

Now,

A	:	B	:	C
5	:	4	:	
		5	:	3
25	:	20	:	12

$$\therefore \text{Share of B} = \frac{1265}{3400} \times 20 = ₹ 860$$

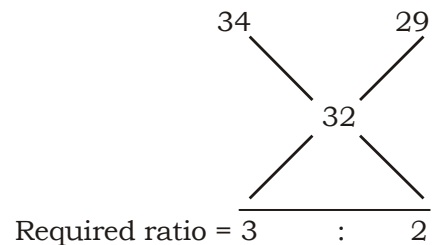
57. (D) ATQ,

$$\text{Number of successful students} = \frac{240}{16} \times 9 = 135$$

$$\text{Number of unsuccessful students} = \frac{240}{10} \times 7 = 105$$

$$\therefore \text{Required ratio} = 140 : 100 = 7 : 5$$

58. (B) ATQ,



59. (C) ATQ,

$$1 + \frac{2}{1 - \frac{2}{1 + \frac{2}{1 - \frac{1}{3} + \frac{1}{2}}}} = 1 + \frac{2}{1 - \frac{2}{1 + \frac{2 \times 6}{6 - 2 + 3}}}$$

$$= 1 + \frac{2}{1 - \frac{2 \times 7}{19}} = 1 + \frac{2 \times 19}{5} = \frac{43}{5} = 8 \frac{3}{5}$$

60. (D) Total run scored in lowest and Highest = $40 \times 35 - 33 \times 38$

$$\therefore x + x + 96 = 146$$

$$\Rightarrow x = 25$$

$$\therefore \text{Highest score of the player} = 25 + 96 = 121$$

61. (A) Let the cost price = x

ATQ,

$$745 - x = x - 215$$

$$\Rightarrow 2x = 960$$

$$\Rightarrow x = 480$$

62. (B) Let the present earning of the business man = x

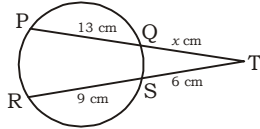
ATQ,

$$\frac{x \times 125}{100} \times \frac{80}{100} \times \frac{125}{100} \times \frac{80}{100} = 10000$$

$$\Rightarrow x = 10000$$

63. (D) All interior angle of regular Hexagon is 120:

64. (C) ATQ,



$$\begin{aligned} x \times (13 + x) &= 6 \times (9 + 6) \\ \Rightarrow 13x + x^2 &= 90 \\ \Rightarrow x^2 + 13x - 90 &= 0 \\ \Rightarrow x^2 + 18x - 5x - 90 &= 0 \\ \Rightarrow x(x + 18) - 5(x + 18) &= 0 \\ \Rightarrow x &= 5 \end{aligned}$$

65. (A) ATQ,

$$\begin{aligned} x^2 + \frac{1}{x^2} &= 51 \\ \Rightarrow \left(x - \frac{1}{x}\right)^2 + 2 &= 57 \\ \Rightarrow x - \frac{1}{x} &= 7 \end{aligned}$$

$$\begin{aligned} \text{Now, } \left(x - \frac{1}{x}\right)^3 &= (7)^3 \\ \Rightarrow x^3 - \frac{1}{x^3} - 3 \times 7 &= 343 \\ \Rightarrow x^3 - \frac{1}{x^3} &= 364 \end{aligned}$$

66. (B) ATQ,

Income —	Expenditure	= Saving
100	80	= 20
↓ 25% ↑	↓ 20% ↑	
$\frac{100 \times 125}{100} = 125$	$\frac{80 \times 20}{100} = 96$	= 29

$$\begin{aligned} \therefore \text{ Required increment} &= \frac{9}{20} \times 100 \\ &= 45\% \end{aligned}$$

67. (B) Required speed car = $\frac{45 \times 8}{6}$
= 60 km/hr

$$\begin{aligned} \therefore \text{ Required increment} &= \frac{15}{45} \times 100 \\ &= 33.3\% \end{aligned}$$

68. (A) Let the speed of the another train = x km/hr

ATQ,

$$\left(\frac{200 + 250}{9}\right) \times \frac{18}{5} = 80 + x \Rightarrow x = 100$$

∴ Speed of another train = 100 km/hr

69. (B) Required rate = $\frac{1597.2 - 1452}{1452} \times 100$
= 10%

$$\text{Now, } 1452 = P \left(1 + \frac{10}{100}\right)^2$$

$$\Rightarrow 1452 = P \left(\frac{11}{10}\right)^2$$

$$\Rightarrow \frac{1452 \times 10 \times 10}{11 \times 11} = P$$

∴ Required amount = ₹ 1200

70. (A) Volume of cylinder

$$\begin{aligned} &= \frac{27}{7} \times 9 \times 9 \times 14 \\ &= 3564 \text{ cm}^2 \end{aligned}$$

71. (D) ATQ,

$$\begin{aligned} \frac{x^3 + y^3}{x + y} + 3xy &= \frac{x^3 + y^3 + 3xy(x + y)}{x + y} \\ 1 + \frac{2xy}{x^2 + y^2} &= \frac{x^2 + y^2 + 2xy}{x^2 + y^2} \\ &= \frac{(x + y)^3}{(x + y)^2} = x^2 + y^2 \end{aligned}$$

72. (C) ATQ,

$$x = \frac{\sqrt{3} + 1}{\sqrt{3} - 1} \times \frac{\sqrt{3} + 1}{\sqrt{3} + 1}, y = \frac{\sqrt{3} - 1}{\sqrt{3} + 1} \times \frac{\sqrt{3} - 1}{\sqrt{3} - 1}$$

$$\Rightarrow x = \frac{4 + 2\sqrt{3}}{2} \text{ and } y = \frac{4 - 2\sqrt{3}}{2}$$

$$= 2 + \sqrt{3} \quad = 2 - \sqrt{3}$$

$$\text{Now, } \frac{x^2 - xy + y^2}{x^2 + xy + y^2} = \frac{(x + y)^2 - 3xy}{(x + y)^2 - xy}$$

$$\begin{aligned} &= \frac{(2 + \sqrt{3} + 2 - \sqrt{3})^2 - 3(2 + \sqrt{3})(2 - \sqrt{3})}{(2 + \sqrt{3} + 2 - \sqrt{3})^2 - (2 + \sqrt{3})(2 - \sqrt{3})} \end{aligned}$$

$$= \frac{16 - 3}{16 - 1} = \frac{13}{15}$$

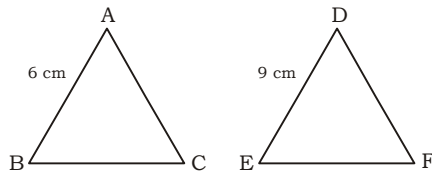
73. (A) $\frac{3^7 \times 7^3}{8} = \frac{(3^2)^3 \times 3 \times (7)^3}{8}$

$$= \frac{(9)^3 \times 3 \times (7)^3}{8}$$

$$= (1)^3 \times (5) (7)^3$$

Required difference = 5

74. (A) ATQ,



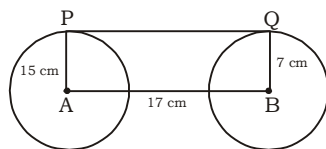
We know that,

Ratio of areas of two similar triangles = Ratio of square of their corresponding sides

$$\therefore \frac{\text{Area of } \Delta ABC}{\text{Area of } \Delta DEF} = \left(\frac{AB}{DE}\right)^2$$

$$\Rightarrow \text{Area of } \Delta ABC = \frac{9 \times 9}{12 \times 12} \times 96 = 54 \text{ cm}^2$$

75. (B) ATQ,

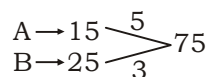


$$PQ = \sqrt{(AB)^2 - (PA - QB)^2}$$

$$\Rightarrow PQ = \sqrt{289 - (15 - 7)^2} = \sqrt{225}$$

$$\Rightarrow PQ = 15 \text{ cm}$$

76. (D) ATQ,



$$\therefore \text{Required time} = \frac{75}{5-3} = 37.5 \text{ hr}$$

77. (A) ATQ,

A : B B : C

$$65 : 100 \quad 100 : \frac{100 \times 100}{120}$$

$$13 : 20 \quad 6 : 5$$

Now, A : B : C

$$13 : 20$$

$$6 : 5$$

$$78 : 120 : 100$$

$$39 : 60 : 50$$

$$\frac{50 \times x}{100} = 39$$

$$\Rightarrow x = 78\%$$

78. (B) Let the loss = x

ATQ,

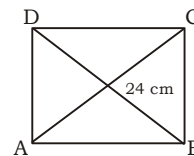
$$24000 + x = 36000 - 7x$$

$$\Rightarrow 8x = 12000$$

$$\Rightarrow x = 1500$$

$$\therefore \text{Required cost price} = 24000 + 1500 = 25500$$

79. (A) ATQ,



$$\text{Area of Rhombus} = \frac{\text{Product of diagonal}}{2}$$

$$\Rightarrow 96 = \frac{24 \times L}{2}$$

$$\Rightarrow \text{length of other diagonal} = 8 \text{ cm}$$

80. (D) ATQ,

$$\frac{36}{49} = \frac{\pi(9)^2}{\pi(R)^2}$$

$$\Rightarrow \frac{9}{R} = \frac{6}{7} = 10.5 \text{ cm}$$

81. (D) ATQ,

	Pencil	Cost
CP	2 × [3	20]
SP	3 × [2	11]
CP	6	40
SP	6	33

$$\therefore \text{Required loss} = \frac{7}{40} \times 100 = 17.5\%$$

82. (B) Required ratio = 200 : 1000

$$= 1 : 5$$

83. (D) Required average

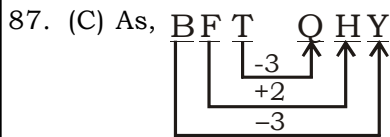
$$= \frac{200 + 400 + 1000 + 600 + 300 + 900}{6}$$

$$= 566.67$$

84. (D) Required ratio = $200 + 400 + 1000 : 600 + 300 + 900$
 $= 8 : 9$

85. (D) Total production after increment
 $= \frac{200 \times 120}{100} + \frac{400 \times 125}{100} + \frac{1000 \times 130}{100}$
 $+ \frac{600 \times 140}{100} + \frac{300 \times 45}{100} + \frac{900 \times 50}{100}$
 $= 240 + 500 + 1300 + 840 + 435 + 1350$
 $= 4665$
 \therefore Required increment
 $= \frac{1265}{3400} \times 100$
 $= 37.2\%$

86. (A) Agra city is situated on the bank of river Yamuna, while Ahmedabad city is situated on the bank of river **Sabarmati**.



88. (B) As,
 $67 \Rightarrow 6 \times 7 = 42 \Rightarrow 24$
 Similarly $96 \Rightarrow 9 \times 6 = 54 = \mathbf{45}$

89. (A)

$= 38 \Rightarrow 38 - 4 = \mathbf{34}$
 Similarly,
 $= 34 \Rightarrow 34 - 4 = \mathbf{30}$

90. (A) As, $15 : 35 \Rightarrow 15 \times \frac{7}{3} = 35$
 Similarly, $24 : \mathbf{56} \Rightarrow 24 \times \frac{7}{3} = \mathbf{56}$

91. (D) Except **Horse**, all others are Carniveres.

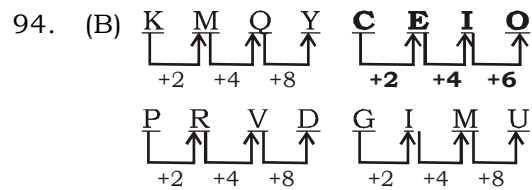
92. (C) Except **Mirabai Chanu**, all others are awarded by Dhyan Chand Award 2018. While Mirabai Chanu awarded by Rejeev Gandhi Khel Ratna.

93. (D) $47 \xrightarrow{\text{Opp.}} 74 \Rightarrow \frac{74}{2} = 37$

$29 \xrightarrow{\text{Opp.}} 92 \Rightarrow \frac{92}{2} = 46$

$68 \xrightarrow{\text{Opp.}} 96 \Rightarrow \frac{86}{2} = 43$

$49 \xrightarrow{\text{Opp.}} 94 \Rightarrow \frac{94}{2} = \mathbf{47}$



95. (D) The Product of digits of second number is divisible by the first number.
 $4 \times 6 \times 1 = 24$ is divisible by 6.
 $7 \times 4 \times 2 = 56$ is divisible 7.
 $2 \times 4 \times 4 = 32$ is divisible by 8.
 $\mathbf{7 \times 8 \times 2 = 112}$ is not divisible by 9

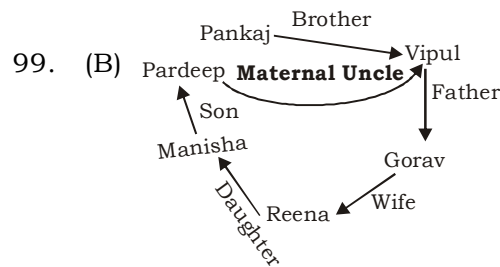
96. (A)

97. (B) As, $\frac{7 \times 4}{2} = 14$

Similarly, $\frac{9 \times 8}{3} = 24$

and, $\frac{7 \times 8}{4} = \mathbf{14}$

98. (B)



100. (B) Required angle = $\left| \frac{11M - 60H}{2} \right|$
 $= \left| \frac{11 \times 20 - 60 \times 8}{2} \right|$
 $= \left| \frac{220 - 480}{2} \right| = \frac{260}{2} \times \frac{\pi}{180}$
 $= \frac{13}{18} \pi$

101. (C)

Yellow	Blue	Red
↓ opp.	↓ opp.	↓ opp.
Orange	Green	Black

102. (C)

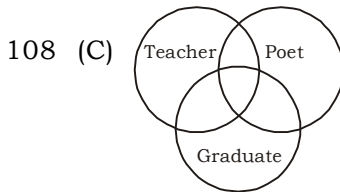
103. (C)

104. (C) $9, 8, 12, 27, 92$
 $\times 1-1^2 \quad \times 2-2^2 \quad \times 3-3^2 \quad \times 4-4^2$

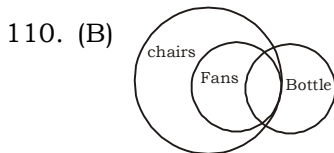
105. (A) $19, 28, 43, 67, 103$
 $+9, +15, +24, +36$
 $+6 \quad +9 \quad +12$

106. (A) $(3)^2 = 9$
 $(3 + 5)^2 = (8)^2 = 64$
 $(8 + 7)^2 = (15)^2 = 225$
 $(15 + 9)^2 = (24)^2 = 576$
 $(24 + 11)^2 = (35)^2 = 1225$

107. (C) Side of larger Cube = $\sqrt[3]{125} = 5$ cm
 Number of small cubes having no side coloured = $(5 - 2)^3 = 27$



109. (C) abc/cba/bca/acb/cab/bac



- I. ×
 II ✓

Hence, only conclusion II follows.

111. (D) As, $(7)^2 + (6)^2 + (41)^2 = 101$
 and, $(5)^2 + (7)^2 + (6)^2 = 110$
 Similarly, $(2)^2 + (9)^2 + (8)^2 = 149$

112. (C) Number of days after 5th June to 22nd September
 = 25 + 31 + 31 + 22
 = 109

∴ Number of odd days = $\frac{109}{7} = 4$ odd days

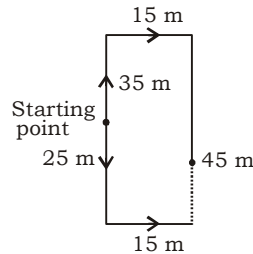
∴ Poonam's birthdays = Tuesday + 4 = **Saturday**

113. (B) Position of is chainging upward.

114. (B)

115. (A)

116. (A)



Hence, Mukesh is in **15 km south** of Anil.

117. (A)

118. (B)

119. (D)

120. (C)

Answer key

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