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## RPF MOCK TEST - 6 (SOLUTION)

51. (B) Let the age of elder person $=x$ years and, the age of younger person $=(x-18)$ years
ATQ,
$(x-8)=4(x-18-8)$
$\Rightarrow x-8=4 x-104$
$\Rightarrow 3 x=96$
$\Rightarrow x=32$
$\therefore$ Required sum $=32+(32-18)=46$ years
52. (A) A.T.Q.

Perimeter of the park $=15 \times \frac{6}{60}=\frac{3}{2}$
$=1500 \mathrm{~m}$
Now,
$2(4 x+x)=1500$
$\Rightarrow x=\frac{1500}{10}=150$
$\therefore$ Area of park $=4 x \times x=4 x^{2}$

$$
\begin{aligned}
& =4 \times 150 \times 150 \\
& =90000 \mathrm{~m}^{2}
\end{aligned}
$$

53. (C) Length of the longest rod
$=\sqrt{120^{2}+60^{2}+40^{2}}$
$=\sqrt{14400+3600+1600}$
$=140 \mathrm{~cm}$
54. (A) Let the speed of the stream $=x \mathrm{~km} / \mathrm{hr}$ A.T.Q.,
$\frac{22}{18+x}+\frac{22}{18-x}=\frac{11}{4}$
$\Rightarrow \frac{18-x+18+x}{324-18 x+18 x-x^{2}}=\frac{1}{8}$
$\Rightarrow 228=324-x^{2}$
$\Rightarrow x=6$
55. (C) A.T.Q.,
$\frac{4 \times 0.30-3 \times 0.500}{0.003}$
$=\frac{1.20-1.500}{0.003}=\frac{-0.3}{0.003}=-100$
56. (A) A.T.Q.,

They will met after $=$ LCM of $\left(\frac{13}{4}, \frac{13}{6.5}, \frac{13}{9}\right)=26$
$\therefore$ Round completed by second person
$=\frac{26 \times 6.5}{13}=13$
57. (A) Let $a=18, b=12$ and $c=16$

Now, $a b+a+b=246$
Then, $18 \times 12+18+12=246$ (satisfy) and, $a c+a+c=322$
$18 \times 16+18+16=322 \quad$ (satisfy)
and, $b c+b+c=220$
$12 \times 16+12+16=220 \quad$ (satisfy)
$\therefore a+b+c=18+16+12=46$
58. (B) Let the work done by 1 man in 1 days

$$
=1 \text { unit }
$$

$\therefore$ Total work $=1+2+3+4$
= 91
$\therefore$ Required nuumber of days $=\frac{91}{8}$

$$
=11 \frac{3}{8}
$$

59. (C) Total number of ways

$$
=4 \times 3 \times 2 \times 3=72
$$

60. (D) Taking option (D)
$145 \Rightarrow 1+4!+5!=1+24+120=145$
61. (B) A.T.Q.,
$15=3 \times 5$
$20=2 \times 2 \times 5$
LCM of 15 and $20=60$
and, $60 \times 3=180$
So, number can be $=3 \times 3,3 \times 3 \times 5,3$
$\times 3 \times 5 \times 2,3 \times 3 \times 5 \times 2 \times 2$.
62. (D) ATQ,
$\frac{1}{p}+\frac{1}{q}=\frac{1}{p+q}$
$\Rightarrow \frac{p+q}{p q}=\frac{1}{p+q}$
$\Rightarrow(p+q)^{2}=p q$
$\Rightarrow p^{2}+q^{2}+2 p q=p q$
$\Rightarrow p^{2}+q^{2}+p q=0$
$\& p^{3}-q^{3}=(p-q)\left(p^{2}+q^{2}+p q\right)$
$\therefore p^{3}-q^{3}=0$
63. (C) $x^{2}-y^{2}+10 x z+10 y z$
$=(x-y)(x+y)+10 z(x+y)$
$=0+10 \times 94(93+93)$
$=174840$
64. (C) Passed Failed

$\therefore$ Number of passed candidates $=80$
2555208888

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65. (C) ATQ,
$x^{3}-\mathrm{p}=(x-4)\left(x^{2}+4 x+16\right)$
$\Rightarrow x^{3}-\mathrm{p}=x^{3}-4^{3}$
$\therefore \mathrm{P}=64$
66. (D) Volume of the new sphere $=$ sum of volume of all small spheres
$\frac{4}{3} \pi \mathrm{R}^{3}=\frac{4}{3} \pi \times \frac{6}{2} \times \frac{6}{2} \times \frac{6}{2} \times 1000$
$\Rightarrow R=\frac{60}{2}=30 \mathrm{~cm}$
$\therefore$ Diameter $=2 R=60 \mathrm{~cm}$
67. (D) ATQ,

If $(x-3)^{2}+(y-4)^{2}+(z-5)^{2}=0$
$x-3=0 \Rightarrow x=3$
$\mathrm{y}-4=0 \Rightarrow \mathrm{y}=4$
$z-5=0 \Rightarrow z=5$
$\therefore x+y+z=3+4+5=12$
68. (D) ATQ,
$2 x+\frac{1}{3 x}=5$
then $6 x^{2}+1=15 x$
$\Rightarrow \frac{5 x}{6 x^{2}+20 x+1}=\frac{5 x}{20 x+15 x}=\frac{5 x}{35 x}=\frac{1}{7}$
69. (C) Ratio of angle $=1: \frac{2}{3}: 3=3: 2: 9$
$\therefore$ Smallest angle $=\frac{2}{14} \times 180^{\circ}$

$$
=25 \frac{5^{\circ}}{7}
$$

70. (A) Weight of new parcel $=1.7-\frac{11 \times 60}{1000}$

$$
=1.7-0.66=1.04 \mathrm{~kg}
$$

71. (B) ATQ,
$\pi \times(32)^{2} \times \mathrm{h}=44 \times(8)^{3}$
$\Rightarrow \mathrm{h}=\frac{44 \times 8 \times 8 \times 8 \times 7}{22 \times 32 \times 32}$
$\Rightarrow \mathrm{h}=7$
$\therefore$ Height of rod $=7 \mathrm{~cm}$
72. (C) ATQ,
$2 \%=₹ 15$
$100 \%=\frac{15}{2} \times 100=₹ 750$
$\therefore$ Required M.P. = ₹ 750
73. (C) We know that if last three digits of any number is divisible by 8 , than the number is also divisible by 8.
$\therefore$ The Least value of * $=3$
74. (B) ATQ,
$a^{2}+b^{2}+c^{2}=a b+b c+c a$
$\Rightarrow a^{2}+b^{2}+c^{2}-a b-b c-c a=0$
Multiply by " 2 " on both sides,
$2 a^{2}+2 b^{2}+2 c^{2}-2 a b-2 b c-2 c a=0$
$\Rightarrow(a-b)^{2}+(b-c)^{2}+(c-a)^{2}=0$
$\therefore a=b=c$
$\therefore$ The triangle is equilateral.
75. (C) Money

10x

## Interest

$3 x$

ATQ,
$\frac{10 x \times 6 \times T}{100}=3 x$
$\Rightarrow T=5$ years
76. (B) ATQ,
$14 \%=42$
$100 \%=\frac{42}{14} \times 100=₹ 300$
$\therefore$ Marked price $=₹ 300$
77 (C) Total C.P $\rightarrow 25 \times 12 \rightarrow$ ₹ 300
Total SP $\rightarrow(25+5) \times 10.40=₹ 312$
Profit $\%=\frac{(312-300)}{300} \times 100=4$
78. (C) LCM of 9, 11 and $13=1287$

Remainder = 6
Then the no. is $=1287+6=1293$
$\therefore$ Required no. is $=1294-1293$

$$
=1
$$

79. (A) ATQ,


Efficiency of $A=6-3=3$
Required number of days $=\frac{360}{3}$

$$
\text { = } 120 \text { days }
$$

80. (B) $\mathbf{A} \quad \mathbf{~} \quad \mathbf{B} \quad \mathbf{B} \quad: \quad \mathbf{C}$

$3:$| 3 | 4 | 3.5 | $:$ | 3 |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  | 7 | $:$ |


| $\mathbf{A}$ | $\mathbf{:}$ | $\mathbf{B}$ | $\mathbf{C}$ |
| :--- | :--- | :--- | :--- |
| 3 |  | 4 | 4 |
| 7 |  | 7 | 6 |
| 21 |  | 28 | 24 |

Difference between B's and C's share

$$
=\frac{4}{73} \times 730=₹ 40
$$

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81. (A) ATQ,
C.I. $\rightarrow 24000\left(1+\frac{5}{100}\right)^{3}-2400$
= $27783-240000$
= ₹ 3783
82. (B) Required Percentage
$=\frac{(80+60+60)-(90+70)}{(90+70)} \times 100$
$=\frac{200-160}{100} \times 100$
$=\frac{40}{160} \times 100=25 \%$
83. (B) $\frac{105}{540} \times 360^{\circ}=70^{\circ}$

So, we can say that he scored 105 marks is obtained in Hindi.
84. (A) Science - English
$=80^{\circ}-60^{\circ}$
$=20^{\circ}$
Difference between Mathematics and Hindi is equal to difference between Science and English.
85. (C) Required marks

$$
\begin{aligned}
& =\frac{\left(90^{\circ}+70^{\circ}\right)-\left(60^{\circ}+60^{\circ}\right)}{360^{\circ}} \times 540 \\
& =\frac{40^{\circ}}{360^{\circ}} \times 540^{\circ}=60
\end{aligned}
$$

86. (C) As, Daggle is poor writing.

Similarly, Stammering is speech defect.
87. (B)


Similarly,

88. (D) As, 35-12 $\Rightarrow 7 \times 5-(7+5)$

Similarly, 143 - $24 \Rightarrow 11 \times 13-(11+13)$
89. (B) As, $\frac{6 \times 6 \times 6}{2}=108$

Similarly, $\frac{8 \times 8 \times 8}{2}=\mathbf{2 5 6}$
90. (C) As, $\frac{10+4}{2}=7$

Similarly, $\frac{26+4}{2}=\mathbf{1 5}$
91. (A) Parliament is composed of all other three.
92. (D) Except Deer - Bleat, in all other pairs, second is the noise produced by first.
93. (D) Except 264, in all others middle digit is the product of other two digits.
94. (C) Execpt $\mathbf{2 0} \mathbf{- 8 0}$, in all others, first number $\times 3.5=$ second number
95. (D)

$\stackrel{F}{\mathrm{~F}} \underset{\times 2}{\mathrm{~L}} \underset{\times 2}{ } \quad \frac{X}{\pi}$

96. (B)

97. (A) As, $\frac{16}{4}=\frac{32}{8}=4$

And, $\frac{8}{4}=\frac{4}{2}=2$
Similarly, $\frac{27}{9}=\frac{12}{4}=3$
98. (C) Misplacement
99. (D)

100. (A)

101. (D) From figure,

question figure.

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102. (C)
103. (B)
104. (C)

105. (B)

106. (A) Satya's birthday was on Friday.
108. (A)

109. (A) gfeii/gfeii/gfeii/gfeii
110. (B) As,


Similarly,

111. (D) As, $2895 \Rightarrow(17)^{2} 5$
$3245 \Rightarrow(18)^{2} 5$
and, $3615 \Rightarrow(19)^{2} 5$
Similarly, $\mathbf{5 2 9 5} \Rightarrow(23)^{2} 5$
112. (C) $5 \div 3-25+20=20 \times 30$

After changing the signs,
$5 \times 3+25-20 \div 20=39$
$\Rightarrow 15+25-1=39$
$\Rightarrow \mathbf{3 9}=\mathbf{3 9}$
113. (A)

$\therefore \mathrm{He}$ is $\mathbf{1} \mathbf{~ k m}$ away from the starting point.
114. (B)
115. (D)
116. (D)

117. (C)
118. (A) Required order-

C, M, E, C, M, P, E, P, P, C
119. (C)
120. (D) N E A T

32, 21, 41, 68

## Answer key

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

