IBPS PO SPECIAL PHASE - I - 367 (SOLUTION)

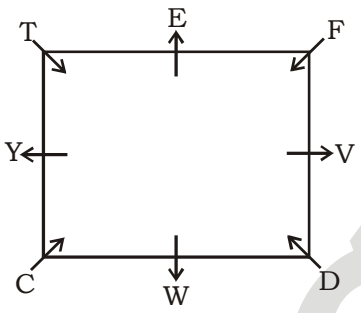
REASONING

(1-5):

Days ⟶ / Month ↓	10th	11th
January	Y	X
February	W	Q
March	Z	R
April	P	V

1. (3) 2. (4) 3. (1)
4. (4) 5. (4)

(6-10) :



6. (2) 7. (3) 8. (4)
9. (3) 10. (4)

(11-15) :

11. (1) C < E ≤ P ≤ S and C < E ≤ P > Q
I. S > C → True
II. E < Q → False
Hence, Only conclusion I is true.

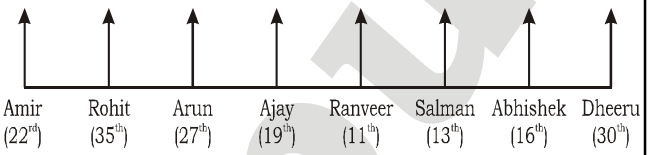
12. (2) S ≥ R > G = N < L ≤ Q
I. R > L → False
II. Q > N → True
Hence, Only conclusion II is true.

13. (1) S ≥ U > V = T
I. S > T → True
II. N > U → False
Hence, Only conclusion I is true.

14. (4) D = H ≥ P ≥ Z > N
I. D ≥ N → False
II. Z < D → False
Hence, Neither conclusion I nor II is true.

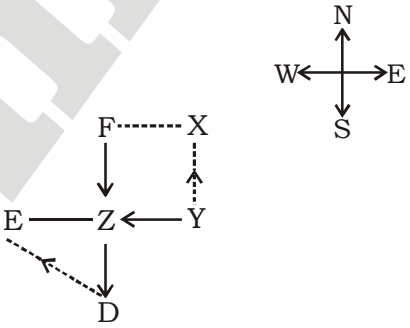
15. (4) F ≥ J ≤ B = S < N
I. S > N → False
II. F ≤ N → False
Hence, Neither conclusion I nor II is true.

(16–20) :



16. (2) 17. (3) 18. (5)
19. (5) 20. (1)

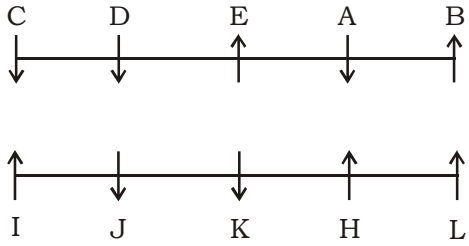
(21-23) :



21. (4) ∴ FZ = XY = 9 m
∴ FD = FZ + ZD = 9 + 5 = 14 m

22. (3) 23. (4) 24. (5)

(25–29) :



25. (4) 26. (2) 27. (3)
28. (5) 29. (2) 30. (2)
31. (1) 32. (3) 33. (5)
34. (4) 35. (2)

Maths

36. (3) 21 26 33 44 63 98 165
+5 +7 +11 +19 +35 +67
+2 +4 +8 +16 +32

37. (2) $52 \div 2 + 2 = 26 + 2 = 28$
$28 \times 2 + 2 = 56 + 2 = 58$
$58 \div 2 + 2 = 29 + 9 = 31$
$31 \times 2 + 2 = 62 + 2 = 64$
$64 \div 2 + 2 = 32 + 2 =$ **34**

38. (4) $29 + (18 \times 1 - 2) = 29 + 16 = 45$
$45 + (18 \times 2 - 2) = 45 + 34 =$ **79**
$79 + (18 \times 3 - 2) = 79 + 52 = 131$
$131 + (18 \times 4 - 2) = 131 + 70 = 201$

39. (5) 13 14 26 54 103 178 284
+1 +12 +28 +49 +75 +106
+11 +16 +21 +26 +31

40. (4) $185.01 + 60 \div (29.9 \div 8.66) = ?$

$\Rightarrow 185 + 60 \times \frac{9}{30} = ?$

$\Rightarrow ? = 185 + 18$
$\Rightarrow ? = 203$

41. (1) $299.97 \div 12 \times 13.98 - ? = 282$

$\Rightarrow \frac{300}{12} \times 14 - ? = 282$

$\Rightarrow 25 \times 14 - ? = 282$
$\Rightarrow 350 - ? = 282$
$\Rightarrow 350 - 282 = ?$
$\Rightarrow ? = 68$

42. (2) 88.025% of 450 = (?) % of 109.998
$\Rightarrow 88\% \times 450 = ?\% \times 110$
$\Rightarrow 88 \times 450 = ? \times 110$
$\Rightarrow 8 \times 450 = ? \times 10$
$\Rightarrow 8 \times 45 = ?$
$\Rightarrow ? = 360$

43. (5) I. Ratio of ages of Swati and Jyoti 6 years ago was 9 : 7,

i.e. $\frac{s-6}{j-6} = \frac{9}{7}$

II. Ratio of ages of Jyoti and Urvashi after 10 years will be 6 : 7,

i.e. $\frac{j+10}{u+10} = \frac{6}{7}$

III. Sum of ages of Jyoti, Rakhi, Urvashi and Swati is 91, i.e.
$j + r + u + s = 91$
We can't solve the question with these three statements.
Hence, option (e) is the answer.

44. (2) Statement I and II:
Total mangoes given to men

$= \frac{114 \times 10}{10 + 5 + 4} = 60$

Total mangoes given to women

$= \frac{114 \times 5}{10 + 5 + 4} = 30$

Total mangoes given to children

$= \frac{114 \times 4}{10 + 5 + 4} = 24$

From II: let mangoes received by 1 child is 'a' and that of 1 man = '2a'
Hence, statement I and II together are not sufficient
Statement I and III :
Total mangoes given to men

$= \frac{114 \times 10}{10 + 5 + 4} = 60$

Total mangoes given to women

$= \frac{114 \times 5}{10 + 5 + 4} = 30$

Total mangoes given to children

$= \frac{114 \times 4}{10 + 5 + 4} = 24$

Let mangoes received by 1men, 1 women and 1 child is 4x, 3x and 2x respectively
Ratio of men, women and child

$= \frac{60}{4x} : \frac{30}{3x} : \frac{24}{2x} = 15 : 10 : 12$

So, men $= \frac{37 \times 15}{15 + 10 + 12} = 15$

Women $= \frac{37 \times 10}{15 + 10 + 12} = 10$

Children $= \frac{37 \times 12}{15 + 10 + 12} = 12$

Number of mangoes each man, woman and child together receive $= \frac{60}{15} + \frac{30}{10} + \frac{24}{12} = 9$

Hence, statement I and III together are sufficient

From I and III

Speed of train P = $\frac{Y + 280}{10.4}$

Length of train = 240 meter

Speed = $\frac{240 + 280}{10.4}$ = 50 m/sec

Thus, the data given in statement I and III are sufficient to answer the question.
So option (b) is the correct answer.

45. (2) From Statement II :
Given cost price = Rs.100
From Statement I :
Say CP = X
Then, Marked price = 140% of X = 1.4X
From statement III :
Selling price = Marked Price (1 – Discount%) = Marked price (1 – 21%)
Now, if we combine Statement I & statement III

Selling price = $(1.4X) \times \left(\frac{79}{100}\right)$

Profit (Gain) = 1.106X
Gain %= 10.6%
∴ Statements I and III together are sufficient to answer the question.

46. (4) Initial Speed of train B = $\frac{500}{40} = \frac{25}{2}$ m/s

Speed of car = $70 \times \frac{5}{18} = \frac{350}{18}$ m/s

Relative speed = $\frac{350}{18} - \frac{25}{2} = \frac{125}{18}$ m/s

Time taken by car =

$\frac{\text{Distance}}{\text{Relative speed}} = \frac{450}{125} \times 18 = \frac{18 \times 18}{5}$ sec

Distance covered by a car = $\frac{18 \times 18}{5}$ sec

= $\frac{18 \times 18}{5} \times \frac{350}{18}$ = 1260 m

After middle point, the relative speed

= 70 – 60 = $5 \times \frac{5}{18}$ sec

Time taken to completely pass the train B from its middle point = $\frac{150}{5 \times \frac{5}{18}}$ = 90 sec

Distance covered by car in 540 sec

= $90 \times \frac{350}{18}$ = 1750 m

Total distance cover by car = 1750 + 1260 = 3010 m or 3.01 km

47. (2) The train can cover (200 + 200) m distance in 20 seconds which means the speed of the train is 20 m/s. Relative speed of man and train is 25 m/s. To cover the distance of 200 metre, it will take 8 sec.

48. (3) Speed of train D = $\frac{550}{22} \times \frac{18}{5}$ = 90 km/hr

Distance cover by train D in 3 hrs
= 90 × 3 = 270 km
Relative speed of both the trains = 90 + 105 = 195 km/hr
Distance travel by both the trains in 2hr
= 195 × 2 = 390 km
Total distance = 390 + 270 = 660 km

49. (4) Speed of Train F = $\frac{(200 + 220)}{18} \times \frac{18}{5}$

= 84 km/hr
Average Speed

= $\frac{\text{Total Distance}}{\text{Total Time taken}} = \frac{600}{\frac{200}{84} + \frac{200}{56} + \frac{200}{21}}$

= $38\frac{10}{13}$ kmph

50. (2) Speed of train E = $\frac{(200 + 280)}{48}$ = 20 m/sec

Distance travel by both the train is same.
Then,
⇒ 15 × (x – 20) = 5 × (2x – 10)
= 3x – 30 = 2x – 10
or, x = 20 m/sec

Speed of train M in Km/hr = $20 \times \frac{18}{5}$

= 72 km/hr

51. (5) Let the present ages of daughter and mother be x and (60 – x) years respectively.
Then, (60 – x) – 6 = 5(x – 6)
$\Rightarrow$ 54 – x = 5x – 30
$\Rightarrow$ 6x = 84
$\Rightarrow$ x = 14
$\Rightarrow$ Daughter's age after 6 years = (x + 6) = 20 years.

52. (4) Speed of train in m/sec = $72 \times \frac{5}{18}$
= 20 m/sec
Let length of train = x
Let length of bridge = y
(x + y) = 35 ×20 = 700 (1)
Speed of another train in m/sec
$= 54 \times \frac{5}{18}$ = 15 m/sec
$\Rightarrow$ (x + x) = (60 + 52) × (20 – 15)
$\Rightarrow$ 2x = 112 × 5
$\Rightarrow$ 2x = 560
$\Rightarrow$ x = 280
Put value of x in equation,
280 + y = 700
y = 700 – 280 = 420 m

53. (1) Let Jyoti's salary is Rs. X per month.
$\therefore \frac{12x}{100} \times \frac{125}{100} = 4800$
x = Rs. 32,000

54. (2) $40 + \frac{2}{5}P = 20 + \frac{2}{7}Q = 10 + \frac{9}{17}R$
$Q = 70 + \frac{7}{5}P$, $R = \frac{510}{9} + \frac{34}{45}P$
$P + 70 + \frac{7}{5}P + \frac{510}{9} + \frac{34}{45}P = 600$,
A = Rs. 150

55. (3) Let the original SP be x.
$\frac{7}{10}$ of the SP = $\frac{7x}{10}$
Profit = 20%
$CP = 100 \times \frac{\left(\frac{7x}{10}\right)}{120} = \frac{7x}{12}$ ..... (1)
If he sells the product at 20% less than the original SP
New SP = 80% of x = $\frac{4x}{5}$ ..... (2)
From (1) and (2)
$\text{Profit\%} = \left\{\left(\frac{4x}{5} - \frac{7x}{12}\right) / \left(\frac{7x}{12}\right)\right\} \times 100$
$= 37\frac{1}{7}$

56. (2) [(29.98% of 779.95)+(25.05% of 219.97)] = ?
[(30% × 780) + (25% × 220)]
$\sqrt{\left(\frac{30}{100} \times 780\right) + \left(\frac{25}{100} \times 220\right)}$
$\sqrt{(234+55)} = \sqrt{(289)} = 17$

57. (3) $\sqrt[3]{4095.87} - \left(\sqrt{360.84} - 12.054\right) \div 6.97 = ?$
$\Rightarrow \sqrt[3]{4096} - \left(\sqrt{361} - 12\right) \div 7 = ?$
$\Rightarrow$ 16 – (19 – 12) ÷ 7
$\Rightarrow$ 16 – 7 ÷ 7
$\Rightarrow$ 16 – 1 = 15

58. (1) $\sqrt{1520.952} \div 25.921 \times 18.021 = ? - 516.95$
$\Rightarrow \sqrt{1521} \div 26 \times 18 = x - 517$
$\Rightarrow 39 \times \frac{18}{26} = x - 517$
$\Rightarrow 27 = x - 517$
$\Rightarrow$ 27 + 517 = x
$\Rightarrow$ x = 544

59. (2) 12.03% of 849.95+1499.92% of 25.95 = 3.98 × (?)
$\Rightarrow$ 12% × 850 + 1500 % × 26 = 4 × x
$\Rightarrow \frac{12}{100} \times 850 + \frac{1500}{100} \times 26 = 4 \times x$
$\Rightarrow$ 102 + 390 = 4x
$\Rightarrow$ 492 = 4x
$\Rightarrow x = \frac{492}{4} = 123$

60. (4) $[(15.96)^2 + 7.5\% \text{ of } 2840] \div 7 = ?$
$? = (16^2 + \frac{7.5}{100} \times 2840) \div 7$
? = (256 + 213) ÷ 7
? = 469 ÷ 7
? = 67

61. (1) Engineers in Karnataka in 2010

$= \frac{12}{100} \times 7500 = 900$

Average number of engineers from Tamilnadu in 2011, 2013 and 2014

$= \frac{1500 + 900 + 900}{3} = \frac{3300}{3}$

Average number of engineers from all the states in 2012

$= \frac{1200 + 1200 + 1800}{3} = \frac{4200}{3}$

Percentage = {(4200/3) – (3300/3)}/(4200/3) = 21.4%

62. (2) Engineers in Karnataka in 2010

$= \frac{12}{100} \times 7500 = 900$

Similarly, engineers in different states in different years :
Total number of engineers in 3 states in 2015 = 900 + 1200 + 1500 = 3600
In 2015, 67% are male engineers. So, Female engineers

$= \frac{100 - 67}{100} \times 3600 = 1188$

63. (2) Number of engineers in 2010 = 900 + 1800 + 1200 = 3900
Number of engineers in 2011 = 1500 + 1500 + 900 = 3900
Number of engineers in 2012 = 1200 + 1200 + 1800 = 4200
Number of engineers in 2013 = 1500 + 900 + 900 = 3300
Number of engineers in 2014 = 1500 + 900 + 1200 = 3600
Number of engineers in 2015 = 900 + 1200 + 1500 = 3600
Therefore, number of engineers in year 2010 and 2011 are equal and number of engineers in year 2014 and 2015 are equal.

64. (1) Percentage increase in the number of engineers in Maharashtra from 2011 to 2015 = (1500 – 900)/900 × 100 = 66.67%
Percentage decrease in the number of engineers in Karnataka from 2013 to 2015
= (1500 – 900)/1500 × 100 = 40%
Difference = 66.67 – 40 = 26.67%

65. (3) Difference of engineers from Karnataka and Tamilnadu in 2013 = 1500 - 900 = 600
Difference of engineers from Maharashtra and Tamilnadu in 2010 = 1800 - 1200 = 600
Ratio = 600: 600 = 1 : 1

(66-70):

66. (2) I. $2x^2 + 9x + 9 = 0$
$2x^2 + 6x + 3x + 9 = 0$
$2x(x + 3) + 3(x + 3) = 0$

$x = \frac{-3}{2}, -3$

II. $15y^2 + 16y + 4 = 0$
$15y^2 + 10y + 6y + 4 = 0$
$5y(3y + 2) + 2(3y + 2) = 0$

$y = \frac{-2}{5}, \frac{-2}{3}$

$x < y$

67. (4) I. $2x^3 = 16$
$x^3 = 8$
$x = 2$

II. $2y^2 – 9y + 10 = 0$
$2y^2 – 5y – 4y + 10 = 0$
$y(2y – 5) – 2(2y – 5) = 0$

$y = 2, \frac{5}{2}$

$x \leq y$

68. (5) I. $6x^2 – 11x + 4 = 0$
$6x^2 – 8x – 3x + 4 = 0$
$2x(3x – 4) – 1(3x – 4) = 0$

$x = \frac{1}{2}, \frac{4}{3}$

II. $3y^2 – 5y + 2 = 0$
$3y^2 – 3y – 2y + 2 = 0$
$3y(y – 1) – 2(y – 1) = 0$

$y = \frac{2}{3}, 1$

69. (3) I. $3x^2 + 11x + 10 = 0$
$3x^2 + 6x + 5x + 10 = 0$
$3x(x + 2) + 5(x + 2) = 0$

$x = –2, \frac{-5}{3}$

II. $y^2 + 11y + 14 = 0$
$2y^2 + 7y + 4y + 14 = 0$
$y(2y + 7) + 2(2y + 7) = 0$

$y = –2, -\frac{7}{2}$

$x \geq y$

70. (5) I. $12x^2 + 11x + 2 = 0$
$12x^2 + 8x + 3x + 2 = 0$
$4x(3x + 2) + 1(3x + 2) = 0$

$x = \frac{-2}{3}, \frac{-1}{4}$

II. $12y^2 + 7y + 1 = 0$
$12y^2 + 4y + 3y + 1 = 0$
$4y(3y + 1) + 1(3y + 1) = 0$

$y = \frac{-1}{3}, \frac{-1}{4}$

IBPS PO SPECIAL PHASE - I - 367 (ANSWER KEY)

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