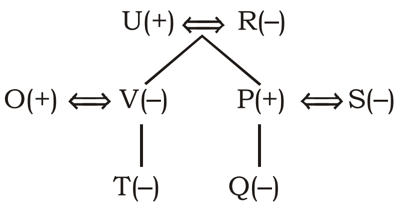
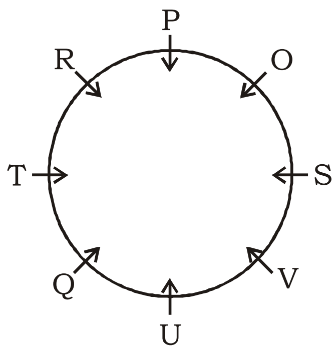
IBPS PO SPECIAL PRELIMS - 370 (SOLUTION)

REASONING

(1–5) :

Family tree





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

6. (4) **Given statements**
$C \geq D = E < G$ ......(i)
$L \geq T > N = G$ .....(ii)
Combining both statements
$C \geq D = E < G = N < T \leq L$
I. $T > D \rightarrow$ True
II. $L > E \rightarrow$ True
III. $C \geq T \rightarrow$ False
IV. $D \leq E \rightarrow$ False
Only I and II are true

7. (4) **Given statements**
$W \leq V = Q < R$ ....(i)
$P > S = T \geq W$ ......(ii)
Combining both statements
$P > S = T \geq W \leq V = Q < R$
I. $P \leq Q \rightarrow$ False
II. $S \leq V \rightarrow$ False
III. $R \leq T \rightarrow$ False
IV. $P > V \rightarrow$ False
None is true.

8. (4) **Given statements**
$H \geq W < M$ ...(i)
$N = P > H$ ...(ii)
$K \leq L < N$ ...(iii)
Combining all these statements
$K \leq L < N = P > H \geq W < M$
I. $N > W \rightarrow$ True
II. $M \geq N \rightarrow$ False
III. $K = H \rightarrow$ False
IV. $P > L \rightarrow$ True
Only I and IV are true.

9. (2) **Given statements**
$G = C \geq P = T$ ...(i)
$U \leq N = J < G$ ...(ii)
Combining both statements
$U \leq N = J < G = C \geq P = T$
I. $U \leq P \rightarrow$ False
II. $G > N \rightarrow$ True
III. $G \geq T \rightarrow$ True
IV. $U < G \rightarrow$ True
Only II, III and IV are true.

10. (2) **Given statements**
$R \leq S < Q = P$ ...(i)
$T = U > E \geq P$ ...(ii)
Combining both statements
$R \leq S < Q = P \leq E < U = T$
I. $S > T \rightarrow$ False
II. $E < Q \rightarrow$ False
III. $S < U \rightarrow$ True
IV. $T > R \rightarrow$ True
Only III and IV are true

(11-15) :

Person	Floor	Game
J	7	Badminton
I	6	Polo
N	5	Chess
L	4	Hockey
M	3	Rugby
O	2	Cricket
K	1	Ludo

11. (4) 12. (1) 13. (2) 14. (3)
15. (4)

(16–20) :

Input : all in one 27 79 every 63 58 90 54
Step I : all in one 27 79 every second 63 58 54 90
Step II : all every in one 27 second 63 58 54 90 79

Step III : all every in one 27 second 58 54 90 79 63

Step IV : all every in one 27 second 54 90 79 63 58

Step V : all every in one second 27 90 79 63 58 54

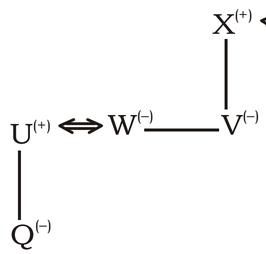
Step VI : all every in one second 90 79 63 58 54 27

Hence, in this illustration step VI is the final step.

16. (1) 17. (3) 18. (5)

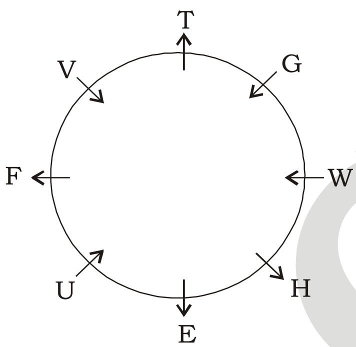
19. (5) 20. (3)

(21-23) :



21. (3) 22. (3) 23. (3)

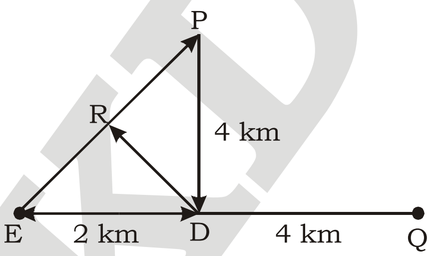
(24-28) :



24. (1) 25. (2) 26. (2) 27. (4)

28. (2)

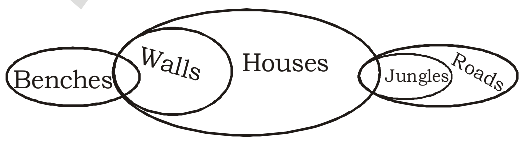
(29-30) :



29. (4) 30. (4)

(31-35) :

31. (3) **Statement :**



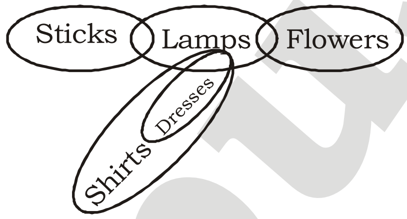
Conclusion :

I. Can't say II. Can't say

I. True IV. True

Only III and IV follow.

32. (1) **Statement :**



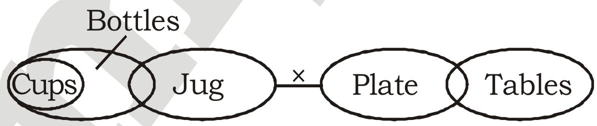
Conclusion :

I. Can't say II. Can't say

III. Can't say IV. Can't say

None follows.

33. (5) **Statement :**



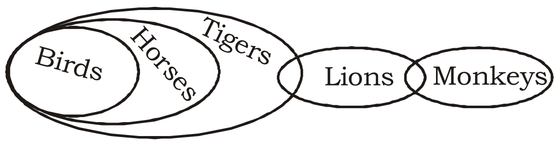
Conclusion :

I. Can't say II. Can't say

III. Can't say IV. Can't say

But after comparing, we find that either I or III is true.

34. (1) **Statement :**



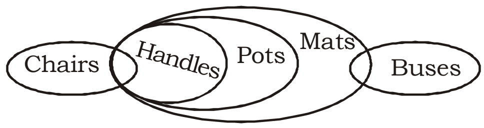
Conclusion :

I. True II. Can't say

III. True IV. Can't say

Only I and III follow.

35. (2) **Statement :**



Conclusion :

I. Can't say II. True

III. True IV. True

Only II, III and IV follow.

Maths

36. (4) Let there are n no. of males

$\therefore$ (n + 15) × 18 = 240 + 20n

$\Rightarrow$ n = 15

37. (2) Let Deepak's present age = (7x + 7) years
Arun's present age = (5x + 7) years
ATQ,
7x – 5x = 14
x = 7
∴ Deepak's present age = 49 + 7 = 56 years

38. (2) Difference between C.I. & S.I. = 450

So, $450 = \frac{p \times 15 \times 15}{100 \times 100}$

⇒ P = 20000
So, amount invested = Rs. 20,000

39. (3) Total letters = D, R, A, S, T, I, C (7)
Total vowels = A, I (2)
∴ Required no. of ways = 6! × 2! = 1440

40. (1) Marking of balls are 1, 5, 7, 10, 14, 15, 20

Required probability = $\frac{4}{20} + \frac{2}{20} = \frac{1}{s} + \frac{1}{10}$

$= \frac{3}{10}$

41. (1) Required difference
= (15% – 5%) of 500 lakhs = 50 lakhs

42. (1) Fund left from government agencies
= 45% of 500 lakhs – 20% of 45% of 500 lakhs = 180 lakhs

43. (2) Required percentage = $\frac{15}{35} \times 100$ = 43%

44. (3) Total amount used by school for payment

$= \frac{30}{100} \times 500$ lakhs

= Rs. 150 lakhs

45. (4) Amount acquired by school from government agencies = 45 × 5 = 225 lakhs

46. (5) 3 5 8 12 17 **23** 30
+2 +3 +4 +5 +6 +7

47. (3) $1^3 \Rightarrow 1$; $2^3 \Rightarrow 8$
$3^3 \Rightarrow 27$; $4^3 \Rightarrow 64$
$5^3 \Rightarrow$ **125** ; $6^3 \Rightarrow 216$
$7^3 \Rightarrow 343$

48. (1) 18 21 16 23 14 **25**
+3 –5 +7 –9 +11

49. (4) 0.4 24 **7.8** 27.4 114.6 579
×1+2 ×2+3 ×3+4 ×4+5 ×5+6

50. (5) 4.5 7 18 68 335 2004
×2–2 ×3–3 ×4–4 ×5–5 ×6–6

51. (3) Suppose the ages of father and son are 5x year and 2x year
After four years, the age of son = (2x + 4) year
After four years, the age of mother = (4x + 8) year
So, the present age of mother = (4x + 4) year
Ratio of the age of father and mother
= 5x : 4x + 4
Since, data is insufficient, so cannot be determined.

52. (1) Amount of mixture in the container = 60 liters
Given, the ratio of water to spirit is 4 : 1
Therefore, Amount of water

$= \frac{4}{5} \times 60 = 48$

Amount of spirit = $\frac{1}{5} \times 60 = 12$

Let the amount of spirit added be x
Therefore,

$\frac{\text{Amount of water}}{\text{Amount of spirit}} = \frac{3}{2}$

$\frac{48}{12 + x} = \frac{3}{2}$

96 = 36 + 3x
3x = 60; x = 20

53. (1) If the investment is the ratio of 8 : 7 then the profit will be in the ratio of 8 : 7

so, $\frac{8}{15} \times 6000 = 3200 \rightarrow$ A's share

54. (2) Initial ratio of red and blue marbles
= 99 : 1
Final ratio of Red and blue marbles becomes 98 : 2 = 49 : 1
As only red marbles are taken out, therefore amount of blue marbles remain constant. Thus, it can be seen that 99 – 49 = 50 parts were taken out. These 50 parts are equal to number of red marbles taken out.
We are given total initial marbles = 200 = 99 + 1 = 100 parts
1 part = 2 marbles
50 parts = 100 marbles

55. (2) Let the income be $\rightarrow 100$

So, $100 \rightarrow 120$

And saving is 10 so, expenditure raises from $90 \rightarrow 110$

Increase $\rightarrow \frac{20}{90} \times 100 = 22.22\%$

56. (5) I. $3x^2 - 38\sqrt{7}x + 728 = 0$

$\Rightarrow 3x^2 - (26\sqrt{7} + 12\sqrt{7})x + 728 = 0$

$\Rightarrow 3x^2 - 26\sqrt{7} - 12\sqrt{7}\,x + 104(\sqrt{7})^2 = 0$

$\Rightarrow (3x - 26\sqrt{7}) - 4\sqrt{7}\,(3x - 26\sqrt{7}) = 0$

$\Rightarrow (x - 4\sqrt{7})\,(3x - 26\sqrt{7}) = 0$

$\Rightarrow x = 4\sqrt{7},\ 26\sqrt{7/3} = 0$

$\Rightarrow x = 4\sqrt{7},\ 8.6\sqrt{7}\ \ (\sqrt{7} = 2.646)$

$\Rightarrow x = 10.584,\ 22.7556$

II. $3y^2 - 104y + 805 = 0$

$\Rightarrow 3y^2 - 104y + 805 = 0$

$\Rightarrow 3y^2 - 69y - 35y + 805 = 0$

$\Rightarrow 3y\,(y - 23) - 35(y - 23) = 0$

$\Rightarrow (3y - 35)\,(y - 23) = 0$

$\Rightarrow y = 35/3,\ 23$

$\Rightarrow y = 11.66,\ 23$

Hence, No relation

57. (5) I. $36x^2 - 19x - 7 = 0$

$\Rightarrow 36x^2 - (28 - 9)x - 7 = 0$

$\Rightarrow 36x^2 - 28x + 9x - 7 = 0$

$\Rightarrow 4x(9x - 7) + 1(9x - 7) = 0$

$\Rightarrow (9x - 7)\,(4x + 1) = 0$

$\Rightarrow x = \frac{7}{9}, \frac{1}{4}$

II. $12y^2 - 5y - 2 = 0$

$\Rightarrow 12y^2 - (8 - 3)y - 2 = 0$

$\Rightarrow 12y^2 - 8y + 3y - 2 = 0$

$\Rightarrow 4y(3y - 2) + 1(3y - 2) = 0$

$\Rightarrow (3y - 2)\,(4y + 1) = 0$

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

58. (5) I. $2x^2 + 6\sqrt{7}\,x - 56 = 0$

$\Rightarrow 2(x^2 + 3\sqrt{7}\,x - 28) = 0$

$\Rightarrow x^2 + 3\sqrt{7}\,x - 28) = 0$

$\Rightarrow x^2 + (4\sqrt{7} - \sqrt{7})x - 28 = 0$

$\Rightarrow x^2 + 4\sqrt{7}\,x - \sqrt{7}\,x - 28 = 0$

$\Rightarrow x(x + 4\sqrt{7}) - \sqrt{7}\,(x + 4\sqrt{7}) = 0$

$\Rightarrow (x - \sqrt{7})\,(x + 4\sqrt{7}) = 0$

$\Rightarrow x = \sqrt{7},\ -4\sqrt{7}$

II. $2y^2 - 9y + 7 = 0$

$\Rightarrow 2y^2 - (7 + 2)y + 7 = 0$

$\Rightarrow 2y^2 - 7y - 2y + 7 = 0$

$\Rightarrow 2y^2 - 7y - 2y + 7 = 0$

$\Rightarrow y(2y - 7) - 1(2y - 7) = 0$

$\Rightarrow (2y - 7)\,(y - 1) = 0$

$\Rightarrow y = \frac{7}{2},\ 1$

59. (5) I. $(\sqrt{26})x^2 + (26^{3/2} - 1)x - 26 = 0$

$\Rightarrow (\sqrt{26})x^2 + 26\sqrt{26}x - x - 26 = 0$

$\Rightarrow \frac{\sqrt{26}x^2}{\sqrt{26}} + \frac{26\sqrt{26}x}{\sqrt{26}} - \frac{x}{\sqrt{26}} - \frac{26}{\sqrt{26}} = 0$

$\Rightarrow x^2 + 26x - \frac{x}{\sqrt{26}} - \frac{26}{\sqrt{26}} = 0$

$\Rightarrow x(x + 26) - \frac{1}{\sqrt{26}}\,(x + 26) = 0$

$\Rightarrow (x - \frac{1}{\sqrt{26}})\,(x + 26) = 0$

$\Rightarrow x = (\frac{1}{\sqrt{26}} = \frac{1}{5.01}),\ -26$

II. $y^2 + 0.7y + 0.1 = 0$

$\Rightarrow y^2 + 0.5y + 0.2y + 0.1 = 0$

$\Rightarrow y(y + 0.5) + 0.2(y + 0.5) = 0$

$\Rightarrow (y + 0.2)\,(y + 0.5) = 0$

$\Rightarrow y = -0.5,\ -0.2$

Hence, No relation

60. (5) I. $(x + 3)^2 < 10x + 6$

$(x + 3)^2 - (10x + 6) < 10x + 6 - (10x + 6)$

$\Rightarrow (x + 3)^2 - 10x - 6 < 0$

$\Rightarrow x^2 + 9 + 6x - 10x - 6 < 0$

$\Rightarrow x^2 - 4x + 3 < 0$

$\Rightarrow x^2 - 3x - 1x + 3 < 0$

$\Rightarrow x(x - 3) - 1(x - 3) < 0$

$\Rightarrow (x - 3)(x - 1) < 0$

$\therefore 1 < x < 3$

II. $5 - x = y$

If $x = 1$, then

$\Rightarrow y = 5 - 1 = 4$

If x = 3, then
$\Rightarrow$ y = 5 – 3 = 2
$\therefore$ 2 < y < 4
Hence, No relation can be established.

61. (1) A does 25% of work in 5 days, 100% work will be done in 20 days
D does (100 – (25 + 20 + 10 + 20)) = 25% of work in 4 days, 100% work will be done in 16 days
Total work = LCM(20,16) = 80 units
A does = $\frac{80}{20}$ = 4 units/day
D does = $\frac{80}{16}$ = 5 units/day
A + D = 4 + 5 = 9 units/day
So, total work will be done in = $\frac{80}{9}$ days
= 8.88 days

62. (5) B does 20% work in 4 days then 100% will be done in 20 days.
Let the total amount of work be 100 units.
B does 5 units/day.
B + E = $\frac{100}{9\frac{1}{11}}$ units/day = 11 units/day
E does (11 – 5) = 6 units/day
The required answer = $\frac{100}{6}$ = 16.67 days

63. (3) A's efficiency 20 days to do whole work
B's efficiency 20 days to do whole work
C's efficiency 40 days to do whole work
D's efficiency 16 days to do whole work
Total units of work = LCM(20, 20, 40, 16)
= 320 units
A = 16 units/day
B = 16 units/day
C = 8 units/day
D = 20 units/day
40% of whole work is = 320 × 0.4
= 128 units
A + B = 16 + 16 = 32 units/day
B + C = 16 + 8 = 24 units/day
C + D = 8 + 20 = 28 units/day
Now left amount of target work
= 128 – (32 + 24 + 28) = 44 units
4th day work done = A + B = 32,
So left = 44 – 32 = 12
The required answer is = 4.5 days

64. (3) A, B, C and D separately can do the work in 20, 20, 40 and 16 days respectively.
Total work = LCM (20, 20, 40, 16)
= 320 units
A = 16 units/day
B = 16 units/day
C = 8 units/day
D = 20 units/day
A + B = 16 + 16 = 32 units/day
B + C = 16 + 8 = 24 units/day
$\frac{1}{5^{th}}$ work will be done in (320/5)/32
= 2 days by A and B.
Half of the left work = $\frac{320-64}{2}$ = $\frac{128}{20}$
= 6.4 days
Rest is done = $\frac{128}{24}$ = 5.33 days
The answer is = 2 + 6.4 + 5.33
= 13.73 days

65. (5) A needs 20 days to do whole work
So, F will take 35 days to do the whole job.
The total work be 140 units (LCM of 20,35).
F = 4 units/day
50% more efficiency means
= 6 units/day
So, the required answer is = $\frac{140}{6}$
= 23.33 days

66. (2) $\simeq (17)^2 \times (2)^3 + (9)^3 \times (5)^2$
$\simeq$ 289 × 8 + 729 × 25
$\simeq$ 2312 + 18225 $\simeq$ 20537

67. (4) $\simeq \left(\frac{360\times75}{100}\right)\times\left(\frac{4}{7}\times140\right) \div 8$
$\simeq$ 270 × 80 ÷ 8
$\simeq$ 2700

68. (1) 768 ÷ 24 × 15 - 30 = ? × 9
$\Rightarrow$? × 9 = 450
? = 50

69. (4) $\simeq$ 55 × 55 + 5
$\simeq$ 3030

70. (1) 23 + 9 – ? = 23
? = 32 – 23 = 9

VOCABULARIES

Words	Meaning in English	Meaning in Hindi
Inevitable	Certain to happen; unavoidable	अपरिहार्य
Apparent	Clearly visible or understood; obvious	स्पष्ट
Vulnerable	Susceptible to physical or emotional attack or harm	चपेट में
Pitfalls	Loss	नुकसान
Confronted	Meet (someone) face to face with hostile or argumentative intent	सामना
Enormous	Very large in size, quantity, or extent	विशाल
Stern	(of a person or their manner) serious and unrelenting, especially in the assertion of authority and exercise of discipline	कठोर
Exploit	A bold or daring feat	शोषण, अनुचित लाभ उठाना
Stimulus	A thing or event that evokes a specific functional reaction in an organ or tissue	प्रोत्साहन
Fiercer	Having or displaying an intense or ferocious aggressiveness	भयंकर
Plagiarism	The practice of taking someone else's work or ideas and passing them off as one's own	साहित्यिक चोरी
Discerning	Having or showing good judgment	विवेकी
Tackling	Make determined efforts to deal with (a problem or difficult task)	से निपटने
Demagogue	A political leader who seeks support by appealing to popular desires and prejudices rather than by using rational argument	दुर्जनों का नेता
Barbarity	Extreme cruelty or brutality	बर्बता

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IBPS PO SPECIAL PRELIMS - 370 (ANSWER KEY)

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