IBPS PO Preliminary -2021. IPP – 2021-11002

HINTS & SOLUTIONS

ANSWER KEY

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

HINTS & SOLUTIONS

1. (4)
2. (1)
3. (3)
4. (5)
5. (3)
6. (3)
7. (1)
8. (2)
9. (1)
10. (2)
11. (5)   Refer the second and third paragraphs of the passage. All the three statements are clearly mentioned there to verify that services are more urbanized than manufacturing. Hence (5) is the correct option.
12. (3)   Refer the third paragraph of the passage, "…whereas large states such as Madhya Pradesh have experienced an above-average urbanization in services but a below-average urbanization in manufacturing." So statement (II) is incorrect regarding manufacturing sector. Statements (I) and (III) are clearly mentioned in fourth and third paragraphs respectively. Hence (3) is the correct option.
13. (5)   Refer the second last paragraph of the passage, "Other organized services with high use of technology include financial intermediation, post and telecommunications, other business activities and supporting/auxiliary transport

activities, and travel agencies. Education and health services also record a high usage of computers, but show lower internet usage." So it can be easily said that all four services require the high usage of technology. Hence (5) is the correct option.

14. (1)   Read the passage carefully, the author has tried to bring all the important facts and figures related to the services and manufacturing in India and their contributions towards economic development which ultimately imply that services are more urbanized than manufacturing but they are not tied to big cities and thus raising the possibility of their being a growth driver that can promote inclusive spatial development. Hence only (1) summarizes the passage in a better and most appropriate way.

15. (2)   Read the passage carefully, the author has tried to bring detailed treatment of issues related to services and manufacturing sector in India. He dives deep and tries to follow the chain of reasoning and draw inferences from them. The facts and figures thus accumulated help the author in analyzing the subject in a better way. Hence it can be said that the author's style of writing is analytical.

16. (4)   **Spatial** means relating to space. Hence ' **Dimensional**" is the word most similar in meaning to it.
Foundational means denoting an underlying basis or principle; fundamental.
Radical means characterized by departure from tradition; innovative or progressive.
Elementary means relating to the rudiments of a subject.

17. (1)   **Counterpart** means a person or thing that corresponds to or has the same function as another person or thing in a different place or situation. **Analogue** means a compound with a molecular structure closely similar to that of another. Hence both are similar in meanings.
Bantam means a level of amateur sport typically involving children aged between 13 and 15.
Insignia means a sign or token of something.
Transcription means an arrangement of a piece of music for a different instrument, voice, or group of these.

18. (2)   **Concentrated** means wholly directed to one thing; intense. **Condensed** means made denser or more concise; compressed or concentrated. Therefore both are similar in meaning.
Critical means expressing adverse or disapproving comments or judgments.
Unyielding means (of a mass or structure) not giving way to pressure; hard or solid.

19. (2)   **Upturn** means an improvement or upward trend, especially in economic conditions or someone's fortunes. **Plummet** means a steep and rapid fall or drop. Hence both are opposite in meanings.
Agitation means a state of anxiety or nervous excitement.
Transpose means cause (two or more things) to exchange places.
Convulsion means a violent social or political upheaval.

20. (4)   **Periphery** means the outer limits or edge of an area or object. **Axial** means relating to or forming an axis. Hence both are opposite in meanings.
Selvage means an edge produced on woven fabric during manufacture that prevents it from unraveling.

Ecliptic means a great circle on the celestial sphere representing the sun's apparent path during the year, so called because lunar and solar eclipses can only occur when the moon crosses it.

Arsenal means an array of resources available for a certain purpose.

21. (2) Combative means ready or eager to fight or argue.
Fervid means intensely enthusiastic or passionate.

22. (3) Barbarousness means Characterized by savagery; very cruel.

23. (1)

24. (4) Affluence means the state of having a great deal of money; wealth.

25. (5) Gloom means a state of depression.
Poise means graceful and elegant bearing in a person.

26. (2)

27. (3)

28. (4)

29. (1)

30. (5)

31. (2) The pattern of the number series is as given below:
958 − 833 = 125
833 − 733 = 100
733 − 658 = 75
658 − 608 = 50
∴ ? = 608 − 25 = 583

32. (4) The pattern of the number series is as given below:
11 × 1 − 1 = 10
10 × 2 − 2 = 18
18 × 3 − 3 = 51
51 × 4 − 4 = 200
200 × 5 − 5 = 995
∴ ? = d

33. (1) The pattern of the number series is as given below:
25 × 2 − 2 = 50 − 2 = 48
48 × 2 − 2 = 96 − 2 = 94
94 × 2 − 2 = 188 − 2 = 186
186 × 2 − 2 = 372 − 2 = 370
370 × 2 − 2 = 740 − 2 = 738

34. (2) The pattern of the number series is as given below:
14 + 10 = 24
24 + 19 (= 10 + 9) = 43
43 + 28 (= 19 + 9) = 71
71 + 37 (= 28 + 9) = 108
108 + 46 (= 37 +9) = 154

35. (5) The pattern of the number series is as given below:
144 + 29 = 173
173 − 33 = 140
140 + 29 = 169
169 − 33 = 136
136 + 29 = 165

36. (2) Marked price of article C = $528 \times \frac{100}{(100-20)}$ = Rs.660

Then, marked price of article E = Rs.660

Selling price of article E = $660 \times \frac{(100-15)}{100}$ = Rs.561

Required average = $\frac{(528+561)}{2}$ = Rs.544.5

37. (4) Required Ratio = $450 \times \frac{(100+60)}{100} : 600 \times \frac{(100+50)}{100}$ = 4 : 5

38. (1) Let the cost price of article A be Rs.100
Then, the cost price of article E = Rs.200
Marked price of article A = 100 + 60% of 100 = 160
Marked price of article E = 200 + 20% of 200 = 240
Required Percentage = $\frac{(240-160)}{160} \times 100 = 50\%$

39. (3) Profit % = $(100 + Markup\%) \times \frac{(100 - Discount\%)}{100} - 100$

Profit % for article A = $(100 + 60) \times \frac{(100-25)}{100} - 100 = 20\%$

Similarly,
Profit % for article B = 19%
Profit % for article C = 32%
Profit % for article D = 5%
Profit % for article E = 2%
Profit % for article F = 8%
Hence, minimum profit % is for article E

40. (4) Profit % = $(100 + Markup\%) \times \frac{(100 - Discount\%)}{100} - 100$

Profit % for article B = 19%
Profit % for article F = 8%
Total Profit = 19% of 800 + 8% of 800
= 27% of 800
= Rs.216

41. (1) No. of girls who passed from Class VII = $\frac{75}{100} \times \frac{3}{7} \times 140 = 45$

No. of boys who passed from Class VII = $\frac{65}{100} \times \frac{4}{7} \times 140 = 52$

Total students passed = 45 + 52 = 97

Req. ratio = $\frac{97}{140 - 97} = \frac{97}{43}$

42. (2) Let, the no. of boys and girls in class VIII be x and y respectively.
Total students who passed from class VIII = $\frac{7}{5} \times 150 = 70$

Now, $\frac{50}{100} \times x + \frac{40}{100} \times y = 70$

or, $\frac{x}{2} + \frac{2}{5}y = 70$ ...(i)

also, $x = 150 - y$

or, $\frac{150 - y}{2} + \frac{2}{5}y = 70$

or, $750 - 5y + 4y = 700$

or, $y = 50$

Hence, No. of boys = 150 − 50 = 100

43. (3) No. of girls who passed the exam from class IX = $\frac{50}{100} \times \frac{3}{5} \times 180 = 54$

No. of girls who passed the exam from class IX = $\frac{8}{9} \times 54 = 48$

No. of boys who passed from class XI = $\frac{9}{13} \times 130 - 48$
= 90 − 48
= 42

No. of boys who failed from class XI = $\frac{7}{13} \times 130 - 42$
= 70 − 42
= 28

44. (4) Required ratio = $\dfrac{\frac{2}{3} \times \frac{9}{17} \times 170 + \frac{4}{5} \times \frac{8}{17} \times 170}{\frac{3}{4} \times \frac{3}{7} \times 140}$

= $\dfrac{60 + 64}{45}$

= $\dfrac{124}{45}$

45. (1) Total no. of boys = $72 \times \frac{100}{80} = 90$

Total no. of girls = 150 − 90 = 60

No. of girls who passed the exam = $\frac{17}{25} \times 150 - 72 = 30$

Req. % = $\frac{30}{60} \times 100 = 50\%$

46. (5)
$20x^2 - 59x + 42 = 0$	$2y^2 - 7y + 6 = 0$
$20x^2 - 24x - 35x + 42 = 0$	$2y^2 - 4y - 3y + 6 = 0$
$4x(5x - 6) - 7(5x - 6) = 0$	$2y(y - 2) + 3(y - 2) = 0$
$(5x - 6)(4x - 7) = 0$	$(y - 2)(2y - 3) = 0$
$x = \frac{6}{5}, x = \frac{7}{4}$	$y = 2, y = \frac{3}{2}$

∴ Relationship cannot be established

47. (1)
$8x^2 + 3x - 5 = 0$	$6y^2 + 17y + 12 = 0$
$8x^2 + 8x - 5x - 5 = 0$	$6y^2 + 8y + 9y + 12 = 0$
$8x(x + 1) - 5(x + 1) = 0$	$2y(y + 4) + 3(y + 4) = 0$
$(x + 1)(8x - 5) = 0$	$(y + 4)(2y + 3) = 0$

48. (3)

$x = -1, x = \dfrac{5}{8}$ $y = -4, y = \dfrac{-3}{2}$

$\therefore x > y$

$2x^2 + x - 1 = 0$ $12y^2 - 25y + 12 = 0$

$2x^2 + 2x - x - 1 = 0$ $12y^2 - 16y - 9y + 12 = 0$

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

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

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

$\therefore x < y$

49. (2)

$x = \sqrt[3]{4913}$ $y^2 - 28y + 187 = 0$

$x = 17$ $y^2 - 11y - 17y + 187 = 0$

     $y(y-11) - 17(y-11) = 0$

     $y = 11, y = 17$

$\therefore x \geq y$

50. (3)

$7x + 4y + 5 = 0 \ \ldots\ldots (1)$, $3x - 7y + 37 = 0 \ \ldots(2)$

Solve equation (1) and (2)

$x = -3, y = 16$

$\therefore x < y$

51 – 55: Spanish $= \dfrac{51.6}{100} \times 14000 = 7224$

German $= \dfrac{50.4}{100} \times 14000 = 7056$

English $= \dfrac{53.2}{100} \times 14000 = 7448$

Spanish and Englsh $= \dfrac{14.6}{100} \times 14000 = 2044$

Spanish and German $= 1904$

Only English $= \dfrac{19.2}{100} \times 14000 = 2688$
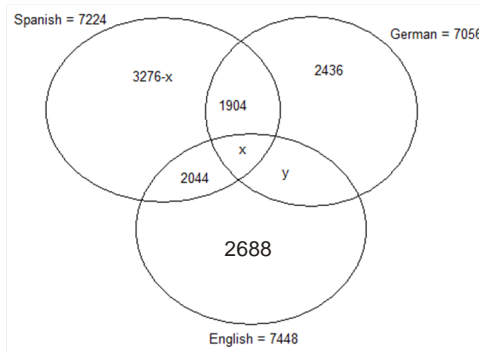
$3276 - x + 1904 + 2044 + 2436 + 2688 + x + y$
$= 14000$
$y = 14000 - 12348 = 1652$
$x = 1064$

51. (2)
52. (3)
53. (4)
54. (1)
55. (4)
56. (2) 20% of Anu's Salary = 75% of Raj's Salary

Anu's Salary : Raj's Salary = 15 : 4
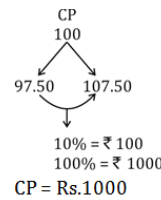
Raj's Salary = 60% of Ravi's Salary

Raj's Salary : Ravi's Salary = 3 : 5

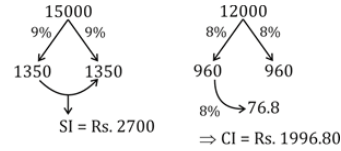Ratio of Salaries of Anu, Raj and Ravi = 45 : 12 : 20

Anu's monthly salary $= 144000 \times \dfrac{45}{20} \times \dfrac{1}{12} = $ Rs.27000

57. (4)

10% = ₹ 100
100% = ₹ 1000
CP = Rs.1000
Now,
Profit % = 12.5%
SP $= 1000 \times \dfrac{112.5}{100} = $ Rs. 1125

58. (2)

SI = Rs. 2700 $\Rightarrow$ CI = Rs. 1996.80

$\therefore$ Total Interest = Rs.4696.80

59. (4) ATQ,

$\dfrac{31x}{23x+75} = \dfrac{124}{107}$

$\Rightarrow x = 20$

$\therefore$ No. of more girls required

$= 31x - 23x - 75 = 8 \times 20 - 75 = 85$

60. (4) 5 years ago,

Average age of husband and wife = 23 years

Total age = 46 years

At present,

Total age of husband and wife = 46 + 2 × 5 = 56 years

Now,

Present age of husband, wife and child = 20 × 3 = 60 years

Present age of child = 60 – 56 = 4 years.

61. (3) $\dfrac{(4 \times 4)^3 \div (512 \div 8)^4 \times (32 \times 8)^4}{} = (2 \times 2)^{?+4}$

or, $\dfrac{(4^2)^3 \times (4^4)^4}{(4^3)^4} = (4)^{?+4}$

or, $\dfrac{4^6 \times 4^{16}}{4^{12}} = (4)^{?+4}$

or, $4^{10} = 4^{?+4}$

or, $? = 6$

62. (5) $?^2 = 2\sqrt{14 \times 14 \times 2} - 21 + 8 + 49 - 28\sqrt{2}$

$= 28\sqrt{2} - 21 + 57 - 28\sqrt{2} = 36 = 6^2$

$\therefore ? = 6$

63. (1) $1 + \dfrac{1}{4} + 1 + \dfrac{1}{6} - 1 - \dfrac{1}{8} = ? + 1\dfrac{1}{12}$

$\Rightarrow ? = 1 + \dfrac{1}{4} + 1 + \dfrac{1}{6} - 1 - \dfrac{1}{8} - 1 - \dfrac{1}{12}$

$= \dfrac{1}{4} + \dfrac{1}{6} - \dfrac{1}{8} - \dfrac{1}{12} = \dfrac{6 + 4 - 3 - 2}{24} = \dfrac{5}{24}$

64. (3) $3420 \times \dfrac{30}{100} \times \dfrac{3}{19} = (?)^2 \times 2$

$\Rightarrow 162 = (?)^2 \times 2$

$\Rightarrow (?)^2 = \dfrac{162}{2} = 81$

$\therefore ? = \sqrt{81} = 9$

65. (2) $\sqrt{3136} \times \dfrac{65}{100} \times 5 = ? + 154$

$\Rightarrow 56 \times \dfrac{65}{100} \times 5 = ? + 154$

$\Rightarrow 182 = ? + 154$

$\Rightarrow ? = 182 - 154 = 28$

66. (3)
67. (4)
68. (1)
69. (3)
70. (5)
71 – 75. i.It is given that O is third to the left of M.O sits at extreme left end. N is third to the left of T and third to the right of P so P sits immediate right to O.

ii.It is given that Q is third to the right of R. The number of dresses which is bought by R is 32. Only one person sits

between M and the one who bought 47 dresses. The one who bought 27 dresses sits at an extreme ends. The person who bought 18 dresses sits 4th to right of P and both are not at extreme ends.

iii. R sits fourth to the left to the one who bought 37 dresses. The number of dresses of S is average of number of dresses of T and P. It is given that the sum of number of dresses of N and O is equal to the number of dresses of T , So there can be two possibilities-

iv. **Case 1**-When O bought 27 dresses. So the condition that the sum of number of dresses of N and O is equal to the number of dresses of T is not possible and this case will be eliminated.

v. **Case 2**-When T bought 27 dresses then the number of dresses of N and O is either 13 or 14. M bought 42 dresses, so the final arrangement is-

13/14	47	32	42	13/14	18	37	27
O	P	R	M	N	Q	S	T

71. (5)
72. (3)
73. (2)
74. (5)
75. (2)

76 – 80. Step1: From the given definite conditions: - Rajat sits third to the left of the person who studies Electrical & Telecommunication Engineering. . The person who studies Information Technology Engineering sits second to the right of Amaan. Amaan is not an immediate neighbour of Rajat. Amaan does not study Electrical & telecommunication Engineering and Rajat does not study IT. Vinay studies Information Technology. Only one person sits between Amaan and the one who studies Electronics & Instrumentation Engineering. From the above given information there is only two possible place were Amaan can sit.
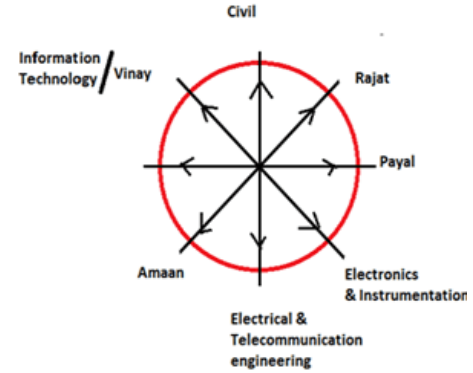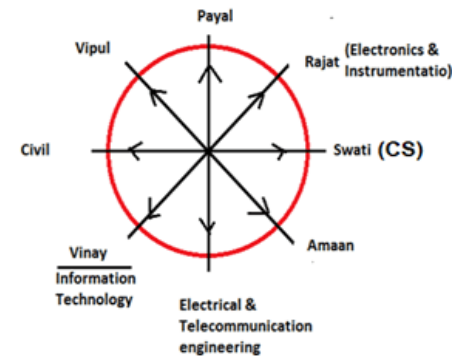
CASE 1.
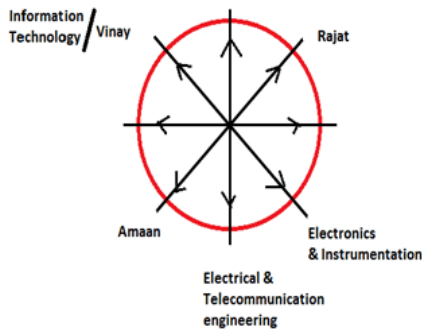
CASE 2.
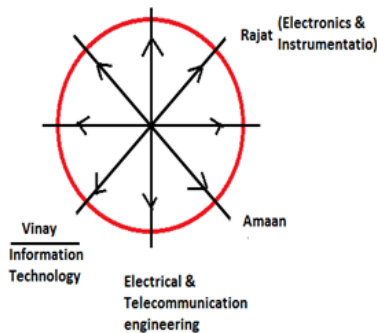
Step 2: Now Payal sits 3rd left Of Amaan. Only one person sits between Payal and the one who studies Civil Engineering. Swati and Payal are not immediate neighbours. Only two students sit between Vipul and Swati. Neither Vipul nor Swati

studies Electrical & Telecommunication Engineering. The one who studies EEE sits third to the left of Rahul. So in case 2 there is only one place for Swati and Vipul. The one who studies EEE and the one who studies Electrical & Telecommunication Engineering are not immediate neighbours. Swati studies computer science Engineering. So in the case 2 if we place Vipul and Swati as per the given condition so there will be no place where we can place the condition For Rahul and the one who studies EEE. Hence case 2 will be eliminated.

Case 1.

Case 2.

Step 3. So now in case-1 from the statements mentioned in Step 2, There is only one place for Rahul that is Rahul Studies Electrical and Telecommunication Engineering. As Swati and Payal are not the immediate neighbour then Vipul sits to the immediate right of Payal and studies in EI Engineering. Now Swati will sit to the immediate right of Amaan and studies Computer Science engineering as because Computer science and Electronics Engineering Students are immediate neighbour and Amaan does not study in Computer science stream. Payal will study in Mechanical stream and Durgesh will study in Civil Stream. Hence we get our final sitting arrangement from the above conditions.
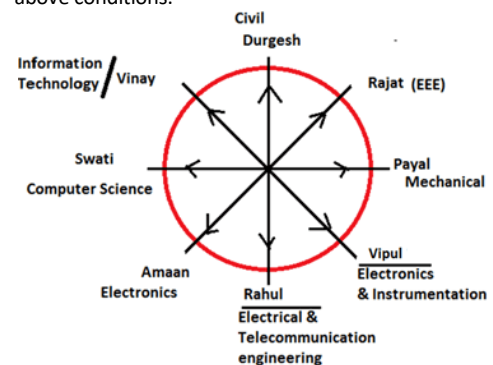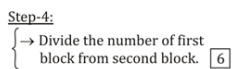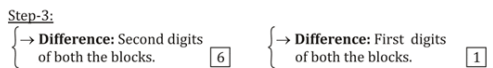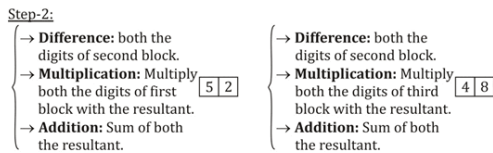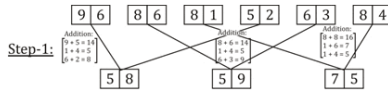

76. (4)
77. (1)

78. (3)
79. (5)
80. (4)
81. (2)
82. (2)

83 – 84.　P - Physics - B
　　　　Q – Maths - C
　　　　R – English - E
　　　　S – Biology - A
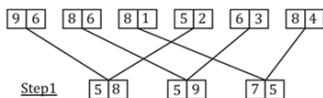　　　　T – Chemistry – D

83. (2)
84. (4)
85. (2)

86 – 90.　Joseph , Hitesh – Britania
　　　　Brijsh – Philips
　　　　Varun – Google
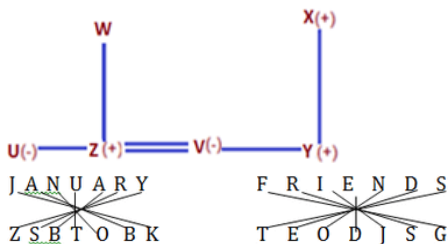　　　　Navneet, Rashmi – Blackberry
　　　　Deepak – TCS

86. (4)
87. (3)
88. (3)
89. (1)
90. (5)

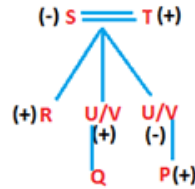91 – 95.

91. (2)
92. (3)
93. (1)
94. (4)
95. (3)
96. (5)

97. (2)

98. (1)

Days	Persons
Monday	G
Tuesday	J
Wednesday	I
Thursday	K
Friday	H

99. (5)

100. (5)　We get that the code for 'exam' is either *'krrzmn'* or *'oknt'*.