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# **IBPS PO PREVIOUS YEAR PAPER**

**IBPS PO Prelims Exam Analysis 2022 : Quantitative Aptitude****(Moderate Level)**

<b>Quadratic Equation</b>	5 Q
<b>Missing Number Series</b>	5 Q
<b>DI BAR chart ( expense, tax based data of 2 person from 2018,2019,2020)</b>	5 Q
<b>Caselet DI ( venn diagram based )</b>	5 Q
<b>Table DI ( voters based )</b>	5 Q
<b>Aritmetic Questions</b>	10 Q
<b>Total</b>	<b>35 Q</b>

**Direction (1-5): Missing Number Series**

- 1) 2, 6, 30, 210, ? 20790
- 2) 2, 6, 12, 20, 30, ?
- 3) 48, 55, 76, ?, 160, 233
- 4) 24, 49, ?, 219, 388, 677
- 5) 15, 16.5, 19.5, 24, ?, 37.5

**Direction(6-10): Read the data carefully and answer the questions.**

There is total 'X' number of students in a class of three different (A, B & C) sections. 40% of total students are in section A and the ratio of total students in section A to C is 10: 9. The ratio of boys to girls in section B is 7: 5 and 60% of total students in section A are boys. There are 40 girls in section C and total 170 girls in the class.

**6. Find difference between total boys and girls in the class?**

- (a) 160
- (b) 120
- (c) 180
- (d) 260
- (e) 140

**7. Total boys in section B are what percent less than total girls in section A?**

- (a) 8%
- (b) 12.5%
- (c) 12%
- (d) 10%
- (e) 17.5%

**8. Find average number of boys in all three sections?**

- (a) 120
- (b) 90
- (c) 110
- (d) 80
- (e) 130

**9. Find ratio of total boys in section C to total girls in all three sections?**

- (a) 17 : 14
- (b) 12 : 17
- (c) 7 : 17
- (d) 13 : 17
- (e) 14 : 17

**10. Total boys in section C are what percent more than total girls in section B?**

- (a) 160%
- (b) 180%
- (c) 200%
- (d) 140%
- (e) 120%

**Directions (11-15):-** In the table, the total number of eligible voters of 5 villages with % valid votes out of total casted votes are given . Answer the question based on following data –

Note: In each village, 10% eligible voters did not cast their votes and only two person stand in the election.

Village	Total voters	Valid votes
A	10000	60%
B	15000	55%
C	8000	80%
D	12000	90%
E	13500	80%

**11. Find ratio b/w number of invalid votes casted in village C to the number of valid votes casted in village B.**

- (a) 7 : 33
- (b) 32 : 165
- (c) 31 : 163
- (d) 17 : 154
- (e) None of these

**12. If the winner got 52% of valid votes in village B. Find the no. of votes got by the person who lost?**

- (a) 4500
- (b) 5578
- (c) 3200
- (d) 3564
- (e) 4578

**13. Find the average number of valid votes of village A and village D together?**

- (a) 7560
- (b) 5500
- (c) 6400
- (d) 6760
- (e) None of these

**14. Find the number of votes by which the winner won in the election if the person who lose got 40% of valid votes in village E?**

- (a) 2140
- (b) 1780
- (c) 1944
- (d) 1550
- (e) 1850

**15. Find how much more/less percent were the valid votes casted in village C in comparison to village A?**

(a)  $\frac{50}{3}\%$

(b)  $\frac{51}{7}\%$

(c)  $\frac{11}{3}\%$

(d)  $\frac{16}{3}\%$

(e)  $\frac{20}{3}\%$

**Directions (16-20):** In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

(a) if  $x > y$

(b) if  $x < y$

(c) if  $x \geq y$

(d) if  $x \leq y$

(e) if  $x = y$  or no relationship can be established

16. I.  $5x + 7y = 339$

II.  $7x + 5y = 321$

17. I.  $x^2 - 18x + 77 = 0$

II.  $3y^2 - 25y + 28 = 0$

18. I.  $2x^2 - 12x + 16 = 0$

II.  $y^2 - 9y + 20 = 0$

19. I.  $4x^2 = 9$

II.  $2y^2 - 9y + 10 = 0$

20. I.  $7x^2 + 6x - 1 = 0$

II.  $32y^2 - 20y + 3 = 0$

**21. A boat can cover 40 km upstream and 60 km downstream in 13 hour. Also it can cover 50 km upstream and 72 km downstream in 16 hour. Find the speed of boat in still water.**

(a) 8.5 kmph

(b) 7.5 kmph

(c) 9.5 kmph

(d) 6 kmph

(e) 7 kmph

**22. Abhinav is 25% more efficient than Satish while Alpa is 40% less efficient than Abhinav. If Satish alone can complete the work in 15 days then in how many days Abhinav and Alpa together can complete the work.**

- (a) 8 days
- (b) 7.5 days
- (c) 6 days
- (d) 5 days
- (e) 5 days

**23. The distance between two stations A and B is 900 km. A train starts from A and moves towards B at an average speed of 30 km/hr. Another train starts from B, 20 minutes earlier than the train at A, and moves towards A at an average speed of 40 km/hr. How far from A will the two trains meet ?**

- (a) 380 km
- (b) 320 km
- (c) 240 km
- (d) 330 km
- (e) 360 Km

**24. The area of a rectangle is equal to the area of a circle whose radius is 14 cm. If the breadth of the rectangle is 22 cm, what is its length?**

- (a) 24 cm
- (b) 28 cm
- (c) 26 cm
- (d) Cannot be determined
- (e) None of these

**25. Raj invested Rs. X in a scheme for 2 year which offered S.I. at the rate of 15% per annum and Adarsh invested Rs. (X + 5000) in another scheme for same period of time on Raj invested on C.I. at the rate of 20% per annum. If both got total interest of Rs. 29950, then find amount invested by Adarsh?**

- (a) Rs. 45500
- (b) Rs. 25000
- (c) Rs. 27500
- (d) Rs.37500

(e) Rs. 42500

**26. Keshav spend 50% of his monthly income on household items and out of the remaining he spends 50% on transport, 25% on entertainment, 10% on Sport and remaining amount of Rs. 1800 is saved. What is Keshav monthly income ?**

(a) 24000Rs.

(b) 16500 Rs.

(c) 18000 Rs.

(d) 20000Rs.

(e) 22000 Rs

**27. B's age is 6 years older than A. if the ratio of B's age 9 years hence and C's present age is 9: 8. At present C's age is twice A's age. What will be age of B after 5 years.**

(a) 18 years

(b) 25 years

(c) 23 years

(d) 24 years

(e) 48 years

**28. P and R entered into partnership business with the capital of Rs. x and Rs. (x + 12000), after One year Q joined them with capital of Rs. (x + 8000) at the end of 2<sup>nd</sup> year P and Q with draw their capital and R invest for one more year, if P, Q and R gets profit in the ratio of 8 : 6 : 21 respectively. Find sum of capital invested by all three?**

(a) 66000 Rs.

(b) 54000 Rs.

(c) 64000 Rs

(d) 68000 Rs.

(e) 70000 Rs.

**29. From a vessel containing only milk, 10 litres are drawn and replaced with water. 10 litres of the mixture is now taken out and replaced with water again. The ratio of milk to water now is 25 : 24. How many litres of milk was there initially?**

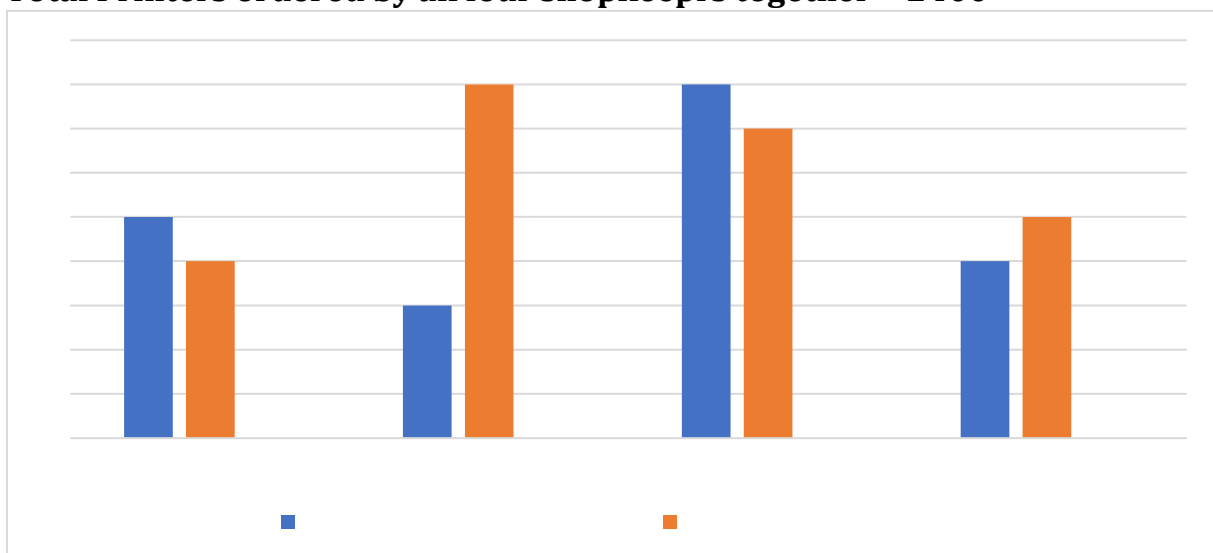
- (a) 20 litres
- (b) 25 litres
- (c) 32 litres
- (d) 35 litres
- (e) none of these

**30. If an article sold at Rs. 256 shopkeeper earn some profit. If he sell it at 25% more then ratio of new to previous profit percent is 15 : 7 . Find the cost price of the article?**

- (a) 200
- (b) 210
- (c) 320
- (d) 210
- (e) 56

**Direction (31–35):** Given bar graph shows percentage distribution of total Printers ordered by four shopkeeper (P, Q, R & S) and percentage of Printers sold by these four shopkeepers out of total Printers ordered by each. Read the data carefully and answer the questions.

**Total Printers ordered by all four shopkeepers together = 2400**



**Q31. Total unsold Printers by P & S together are how much more than total sold Printers by R?**

- (a) 504
- (b) 528
- (c) 512
- (d) 464
- (e) 452



Q32. If total Printers sold by shopkeeper T are 125% more than total Printers sold by Q and shopkeeper T sold 27% of total ordered Printers, then find total Printers ordered by T are what percent more than total Printers ordered by R?

- (a) 36%
- (b) 15%
- (c) 30%
- (d) 20%
- (e) 25%

Q33. Find average number of unsold Printers by Q, R & S?

- (a) 480
- (b) 400
- (c) 320
- (d) 440
- (e) 288

Q34. Find ratio of total Printers sold by P & S together to total Printers sold by Q?

- (a) 5 : 3
- (b) 3 : 5
- (c) 5 : 4
- (d) 5 : 6
- (e) 4 : 5

Q35. If total Printers ordered by shopkeeper A is 100% more than total unsold Printers by S and A sold 30% of total ordered Printers, then find unsold Printers by A are what percent of unsold Printers by P?

- (a) 105%
- (b) 110%
- (c) 100%
- (d) 96%
- (e) 90%

### Solution

6. Ans. a

Let total students in class =  $100x$

Total students in section A =  $100x \times 40/100 = 40x$

Total students in section C =  $40x \times 9/10 = 36x$

Total students in section B =  $100x - (40x + 36x) = 24x$

Total girls in section B =  $24x \times 5/12 = 10x$

Total girls in section A =  $40x \times 40/100 = 16x$

Therefore,

$$10x + 16x + 40 = 170$$

$$26x = 130$$

$$x = 5$$

Sections	Boys	Girls	Total
A	120	80	200
B	70	50	120
C	140	40	180
<b>Total</b>	<b>330</b>	<b>170</b>	<b>500</b>

Required difference =  $330 - 170 = 160$

**7. Ans. b**

Required percentage = Required percentage =  $(80-70)/80 \times 100 = 12.5\%$

8. Ans. c

Required average =  $330/3 = 110$

9. Ans. e

Required ratio =  $140/170 = 14 : 17$

10. Ans. b

Required percentage =  $(140-50)/50 \times 100 = 180\%$

**11. Ans. b**

Required ratio =  $\frac{8000 \times \frac{90}{100} \times \frac{20}{100}}{15000 \times \frac{90}{100} \times \frac{55}{100}} = 32 : 165$

**12. Ans. d**

No. of votes got by loser =  $15000 \times \frac{90}{100} \times \frac{55}{100} \times \frac{48}{100}$

= 3564

**13. Ans. a**

Required average =  $\frac{10000 \times \frac{90}{100} \times \frac{60}{100} + 12000 \times \frac{90}{100} \times \frac{90}{100}}{2}$

= 7560

**14. Ans. c**

No. of votes by which winner won

=  $13500 \times \frac{90}{100} \times \frac{80}{100} \left[ \frac{60}{100} - \frac{40}{100} \right]$

=  $13500 \times \frac{90}{100} \times \frac{80}{100} \times \frac{20}{100}$

$$= 1944$$

**15. Ans. e**

$$\text{Valid votes casted in village C} = 8000 \times \frac{90}{100} \times \frac{80}{100}$$

$$= 5760$$

$$\text{Valid votes casted in village A} = 10000 \times \frac{90}{100} \times \frac{60}{100}$$

$$= 5400$$

$$\text{Required percent} = \frac{(5760-5400)}{5400} \times 100$$

$$= \frac{360}{5400} \times 100$$

$$= \frac{20}{3} \%$$

No. of valid votes casted in village C were  $\frac{20}{3}\%$  more than in village A.

**16. Ans.(b)**

Exp.

On adding both equations  $x + y = 55$  ..... (a)

On subtracting both equations  $y - x = 9$ ..... (b)

From (a) and (b),

$$x = 23, y = 32$$

$$\therefore x < y$$

**17. Ans.(c)**

Exp.

$$\text{I. } x^2 - 11x - 7x + 77 = 0$$

$$\Rightarrow x(x - 11) - 7(x - 11) = 0$$

$$\Rightarrow x = 11 \text{ or } 7$$

$$\text{II. } 3y^2 - 21y - 4y + 28 = 0$$

$$\Rightarrow 3y(y - 7) - 4(y - 7) = 0$$

$$\Rightarrow y = 7 \text{ or } \frac{4}{3}$$

$$\therefore x \geq y$$

**18. Ans.(d)**

Exp.

$$\text{I. } 2x^2 - 8x - 4x + 16 = 0$$

$$\Rightarrow 2x(x - 4) - 4(x - 4) = 0$$

$$\Rightarrow x = 4 \text{ or } 2$$

$$\text{II. } y^2 - 5y - 4y + 20 = 0$$

$$\Rightarrow y(y - 5) - 4(y - 5) = 0$$

$$\Rightarrow y = 5 \text{ or } 4$$

$$\therefore x \leq y$$

**19. Ans.(b)**

Exp.

$$\text{I. } x^2 = \frac{9}{4}$$

$$\Rightarrow x = \pm \frac{3}{2}$$

$$\text{II. } 2y^2 - 5y - 4y + 10 = 0$$

$$\Rightarrow y(2y - 5) - 2(2y - 5) = 0$$

$$\Rightarrow y = 2 \text{ or } \frac{5}{2}$$

$$\therefore x < y$$

**20. Ans.(b)**

Exp.

$$\text{I. } 7x^2 + 7x - x - 1 = 0$$

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

$$\Rightarrow x = -1 \text{ or } \frac{1}{7}$$

$$\text{II. } 32y^2 - 12y - 8y + 3 = 0$$

$$\Rightarrow 4y(8y - 3) - 1(8y - 3) = 0$$

$$\Rightarrow y = \frac{1}{4} \text{ or } \frac{3}{8}$$

$$\therefore x < y$$

**21. Ans. a**

Let upstream speed = u

Downstream speed = d

$$\text{Now } \frac{40}{u} + \frac{60}{d} = 13 \quad \dots \text{(i)}$$

Also

$$\frac{50}{u} + \frac{72}{d} = 16 \quad \dots \text{(ii)}$$

Solving eqn. (i) and (ii)

$$u = 12$$

$$d = 5$$

$$\therefore b = \frac{u + d}{2} = \frac{12 + 5}{2} = 8.5 \text{ kmph}$$

**22. Ans. b**

Abhinav can complete work in =  $15 \times \frac{100}{125} = 12$  days

Alpa can complete work in =  $12 \times \frac{100}{60} = 20$  days

$$\text{Required days} = \frac{12 \times 20}{12 + 20} = \frac{240}{32}$$

= 7.5 days

**23. Ans. a**

Distance covered by 2<sup>nd</sup> train in 20 minutes =  $\frac{20}{60} \times 40 = \frac{40}{3}$  km

Remaining distance =  $900 - \frac{40}{3} = \frac{2660}{3}$  km

Time after which they will meet =  $\frac{\frac{2660}{3}}{70}$  hours

Distance covered from A in this time =  $\frac{2660}{210} \times 30 = 380$  km

**24. Ans. b**

$$\text{Exp. Length} \times 22 = \frac{22}{7} \times 14 \times 14$$

$$\text{Or, Length} = \frac{22}{7} \times \frac{14 \times 14}{22} = 28 \text{ cm}$$

**25. Ans. e**

$$\frac{30x}{100} + \frac{44(x + 5000)}{100} = 29950$$

$$0.30x + 0.44x + 2200 = 29950$$

$$0.74x = 29950 - 2200$$

$$x = \frac{27750}{0.74} = 37500 \text{ Rs.}$$

Adarsh invested =  $37500 + 5000 = 42500$  Rs.

**26. Ans. a**

Exp.

Lets monthly income of Keshav be  $100x$



$$x = 16000$$

Required sum of capital (P + Q + R)

$$= 16000 + (16000 + 8000) + (16000 + 12000)$$

$$= \text{Rs. } 68000$$

**29. Ans. d**

Let initially there be  $x$  litres of milk.

$$\text{Now, } \left(\frac{x-10}{x}\right)^2 = \frac{25}{25+24}$$

$$\Rightarrow \frac{x-10}{x} = \frac{5}{7}$$

$$\Rightarrow 7x - 70 = 5x \Rightarrow x = 35.$$

**30. Ans. a**

Previous selling price = 256

Second selling price

$$= \frac{256 \times 125}{100} = 320$$

Previous profit% =  $7x$

new profit% =  $15x$

$$15x - 7x = 320 - 256 = 64$$

$$x = 8$$

previous profit = 56

$$\text{cost price} = 256 - 56 = 200$$

**31. Ans(a)**

$$\begin{aligned} \text{Total unsold Printers by P \& S} &= 2400 \times \frac{25}{100} \times \frac{80}{100} + 2400 \times \frac{20}{100} \times \frac{75}{100} \\ &= 480 + 360 \\ &= 840 \end{aligned}$$

$$\text{Total sold Printers by R} = 2400 \times \frac{40}{100} \times \frac{35}{100} = 336$$

$$\text{Required difference} = 840 - 336 = 504$$

**32. Ans(e)**

$$\text{Total Printers sold by T} = 2400 \times \frac{15}{100} \times \frac{40}{100} \times \frac{225}{100} = 324$$

$$\text{Total Printers ordered by T} = 324 \times \frac{100}{27} = 1200$$

$$\text{Total Printers ordered by R} = 2400 \times \frac{40}{100} = 960$$

$$\text{Required percentage} = \frac{1200-960}{960} \times 100 = 25\%$$

**33. Ans(b)**

Total unsold Printers by Q, R & S

$$= 2400 \times \frac{15}{100} \times \frac{60}{100} + 2400 \times \frac{40}{100} \times \frac{65}{100} + 2400 \times \frac{20}{100} \times \frac{75}{100}$$

$$= 216 + 624 + 360 = 1200$$

$$\text{Required average} = \frac{1200}{3} = 400$$

**34. Ans(a)**

$$\text{Total Printers sold by P \& S} = 2400 \times \frac{25}{100} \times \frac{20}{100} + 2400 \times \frac{20}{100} \times \frac{25}{100}$$

$$= 120 + 120 = 240$$

$$\text{Total Printers sold by Q} = 2400 \times \frac{15}{100} \times \frac{40}{100} = 144$$

$$\text{Required ratio} = 240 : 144 = 5 : 3$$

**35. Ans(a)**

$$\text{Total Printers ordered by shopkeeper A} = 2400 \times \frac{20}{100} \times \frac{75}{100} \times \frac{200}{100} = 720$$

$$\text{Unsold Printers by A} = 720 \times \frac{70}{100} = 504$$

$$\text{Unsold Printers by P} = 2400 \times \frac{25}{100} \times \frac{80}{100} = 480$$

$$\text{Required parentage} = \frac{504}{480} \times 100 = 105\%$$





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