

IBPS RRB PO PRELIMS PREVIOUS YEAR QUESTION PAPERS

Quantitative Aptitude



RRB PO Pre 2020 Quantitative Aptitude Memory based question

RRB PO Prelims Exam Analysis 2020 : Quantitative Aptitude (Easy-Moderate)

Following types of DIs were asked in this shift:

- Pie DI
- Tabular DI

Topics	No. of Questions	Level
Data Interpretation	12	Moderate
Missing Number Series	5	Moderate
Quadratic Equation	5	Easy-Moderate
Quantity-I Quantity-II	5	Moderate
Arithmetic Word Problem (Age, Partnership, Profit/Loss, Time and Work etc)	13	Moderate
Total	40	Moderate

Good Attempt: 26 to 29.....

Questions

Directions (1-5): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and answer accordingly:

- (a) if $x > y$
(b) if $x \geq y$
(c) if $y > x$
(d) if $y \geq x$
(e) if $x = y$ or no relation can be established

Q1. I. $2x^2 - 19x + 42 = 0$ II.

$2y^2 - 11y + 15 = 0$

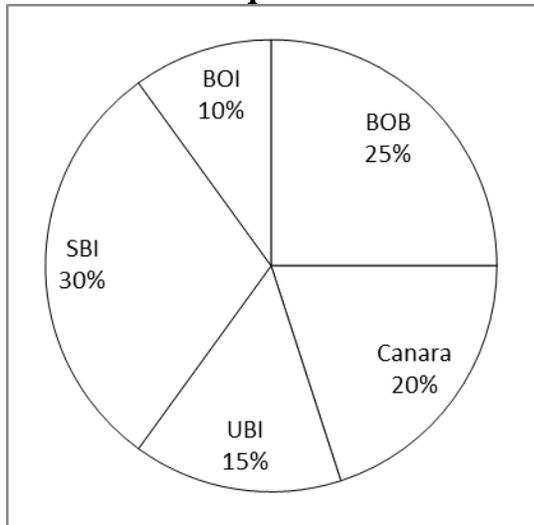
Q2. I. $2x^2 + 15x + 28 = 0$ II. $3y^2 + 11y + 6 = 0$

Q3. I. $15x^2 + 22x + 8 = 0$ II. $8y^2 + 10y + 3 = 0$

Q4. I. $x^2 - 20x + 99 = 0$ II. $y^2 - 16y + 63 = 0$

Q5. I. $x^2 - 169 = 0$ II. $y^3 = 2197$

Direction(6-11): Given below pie chart show percentage distribution of accounts opened by five different banks under 'Jan Dhan Yojana'. Read the data carefully and answer the question.



6. If difference between total accounts opened by SBI and Canara is 2.1 cr, then find total account opened by UBI ?

- (a) 2.15 cr
- (b) 3.15 cr
- (c) 3.25 cr
- (d) 3.05 cr
- (e) 3.75 cr

7. Find ratio between total accounts opened by SBI & BOI together to total accounts opened by Canara ?

- (a) 2 : 1
- (b) 3 : 1
- (c) 4 : 1
- (d) 5 : 1
- (e) 1 : 1

8. Total accounts opened by BOB is what percent more than total accounts opened by BOI?

- (a) 200%
- (b) 125%
- (c) 75%
- (d) 100%
- (e) 150%

Ans: 5

Exp: Let total accounts opened by all five banks = $100x$

Total accounts opened by BOB = $100x \times \frac{25}{100} = 25x$

$$\text{Total accounts opened by BOI} = 100x \times \frac{10}{100} = 10x$$

$$\text{Required percentage} = \frac{25x-10x}{10x} \times 100 = 150\%$$

9. If total accounts opened by UBI and BOI is 3.6 cr, then find difference between accounts opened by Canara and BOB ?

- (a) 0.64 cr
- (b) 0.72 cr
- (c) 0.56 cr
- (d) 0.48 cr
- (e) 0.42 cr

10. If total 24 cr accounts opened by all five bank then find average number of accounts opened by SBI and UBI ?

- (a) 5.6 cr
- (b) 5.4 cr
- (c) 5.2 cr
- (d) 6.4 cr
- (e) 7.2 cr

11.....

12. In a simultaneous throw of two dice, find the probability of getting a sum of 9.

- (a) $\frac{1}{6}$
- (b) $\frac{2}{3}$
- (c) $\frac{1}{15}$
- (d) $\frac{1}{9}$
- (e) $\frac{1}{18}$

13. The average weight of P, Q, R and S is 60 kg. A new person A is also included in the group, then the average weight of the group increased by 2 kg. if a new person B replaces P, then the new average of group becomes 61 kg. find the sum of weight of Q, R, S and B.

- (a) 255 kg
- (b) 235 kg
- (c) 345 kg
- (d) 295 kg
- (e) 265 kg

14. Neha scored 37% marks and failed by 78 marks. If she scored 42% marks, she fails by 48 marks. Find by how much marks would she fail or pass if she scored 48% marks?

- (a) 16 marks, fail
- (b) 12 marks, fail

- (c) 10 marks, pass
- (d) 18 marks, pass
- (e) 25 marks, fail

15. The price of sugar decreases by 20% and consumption of a family increased by 30%. Find the % change in the expenditure of family?

- (a) 4% increase
- (b) 2.5% increase
- (c) 4% decrease
- (d) 2.5% decrease
- (e) 5% increase

16. Prachi's age 6 years ago was $\frac{3}{2}$ times Yashi's age 2 year hence. The ratio between Prachi and Yashi's age 8 year hence will be 16 : 9. Find present age of Yashi's brother if he is 2 year elder than Yashi?

- (a) 16 yrs
- (b) 14 yrs
- (c) 10 yrs
- (d) 12 yrs
- (e) 20 yrs

Ans: 4

Exp:

17. A basket contains 6 Red balls and 9 Green balls. There is another basket which contains 7 Red balls and 8 Green balls. One ball is drawn from either of the two baskets. What is the probability of drawing a Green ball?

- (a) $\frac{7}{30}$
- (b) $\frac{8}{15}$
- (c) $\frac{17}{30}$
- (d) $\frac{11}{15}$
- (e) $\frac{13}{30}$

18. A sum of money of Rs. 8000 is invested at rate of 40% p.a. for 1 year. Find CI if rate is compounded quarterly.

- (a) Rs. 3600
- (b) Rs. 3712.8
- (c) Rs. 3625.18
- (d) Rs. 3576.8
- (e) Rs. 4200

19. A boat can row 20 km upstream in the same time as the boy covers 10 km distance between home and office and then return home with an average speed of 4

km/hr. If the downstream speed of boat is four times speed of current, find speed of boat in still water (in km/hr)?

- (a) 4
- (b) 5
- (c) 6
- (d) 3
- (e) 8

20. Profit earned after selling an article for Rs. 700 is $14\frac{2}{7}\%$ more than profit incurred when it is sold for Rs. 650. What would be the S.P. if he wants to earn a profit of 25%?

- (a) Rs. 500
- (b) Rs. 476
- (c) Rs. 750
- (d) Rs. 375
- (e) Rs. 850

21. A shopkeeper has two quality rice. Rice A is sold at Rs. 40 per kg and Rice B is sold at Rs. 25 per kg. He mixed both the rice together and sold the mixture at Rs. 36 per kg. Find the ratio of quantity of rice A to the total mixture?

- (a) 11 : 4
- (b) 4 : 11
- (c) 4 : 15
- (d) 11 : 15
- (e) None of these

Direction(22-27): 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%

22. 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

23. 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

24. 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

25. 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

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

(a) $16\frac{2}{3}\%$

(b) $7\frac{2}{7}\%$

(c) $3\frac{2}{3}\%$

(d) $5\frac{1}{3}\%$

(e) $6\frac{2}{3}\%$

27.....

28. On a sum of Rs. 6875, find difference between second year and third year C.I if rate of interest is 20% per Annum?

(a) Rs. 275

(b) Rs. 300

(c) Rs. 330

(d) Rs. 325

(e) Rs. 290

29. Area of base of a cylinder is 132cm^2 and height is half of square of radius of it's base. Find volume of the cylinders?

- (a) 2772 cm^3
- (b) 3113 cm^3
- (c) 2376cm^3
- (d) 924 cm^3
- (e) 1452 cm^3

30. Ram and Shyam can do work in 16 days. Shyam takes twice time as Ram takes to do the same work. In how many days Shyam alone can complete that work.

- (a) 16 days
- (b) 32 days
- (c) 24 days
- (d) 40 days
- (e) 48 days

Direction (31-35): Missing Number Series

31) 20, 12, 14, 23, 48, ?

32) 19, 20, 43, 129, ?, 2605

33) 2033, ?, 2054, 2075, 2103, 2138

34) 520, 532, 508, 544, ?, 556

35) 302, 142, 62, ?, 2, -8

Directions (36-40): Each question below contains a statement followed by Quantity I and Quantity II. Find both to find the relationship among them. Mark your answer accordingly.

36. Find the distance if

Quantity I: A man covers a distance in 15 hours. He covers first half at 12 kmph and second half at 15 kmph.

Quantity II: Two buses moves towards each other at a speed of 30 kmph and 40 kmph respectively. When they meet it is found that faster bus covers 30 km more than slower one.

- A) Quantity I > Quantity II
- B) Quantity I \geq Quantity II
- C) Quantity II > Quantity I
- D) Quantity II \geq Quantity I
- E) Quantity I = Quantity II or Relation cannot be established

37. Find the sum

Quantity I: If the Compound Interest for 2 years at 20% rate of interest is Rs 1,320.

Quantity II: If the amount on a sum for 2 years in which rate of interest for 3 years makes a sum of 125 to amount 216 is Rs 2880.

- A) Quantity I > Quantity II
- B) Quantity I \geq Quantity II
- C) Quantity II > Quantity I
- D) Quantity II \geq Quantity I
- E) Quantity I = Quantity II or Relation cannot be established

38. Quantity I: Selling price, if cost price is Rs 24,000 and profit is 20%

Quantity II: Selling price, if cost price is Rs 24,000 and shopkeeper gained $16\frac{2}{3}\%$ after giving discount of 25%

- A) Quantity I > Quantity II
- B) Quantity I \geq Quantity II
- C) Quantity II > Quantity I
- D) Quantity II \geq Quantity I
- E) Quantity I = Quantity II or Relation cannot be established

39. Quantity I: Volume, if diameter of sphere is 14 cm

Quantity II: Volume, if side of cube is 8 cm

- A) Quantity I > Quantity II
- B) Quantity I \geq Quantity II
- C) Quantity II > Quantity I
- D) Quantity II \geq Quantity I
- E) Quantity I = Quantity II or Relation cannot be established

40. B is thrice as efficient as C. B and C can compete a work together in $45/2$ days.

A takes 50% more days than the days taken by A and B to complete the same work together.

Quantity I: No. of days taken by fastest among them to complete the work alone.

Quantity II: Time taken by A and C to complete the work together.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I \leq Quantity II
- (e) Quantity I = Quantity II or No relation

Solution

1. Ans. (a)

Exp.

$$x = 6, \frac{7}{2}$$

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

$$\therefore x > y$$

2. Ans. (c)

Exp.

$$x = -4, -\frac{7}{2}$$

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

$$\therefore y > x$$

3. Ans. (e)

Exp.

$$x = -\frac{2}{3}, -\frac{4}{5}$$

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

\therefore No relation can be established.

4. Ans. (b)

Exp.

$$x = 11, 9$$

$$y = 9, 7$$

$$\therefore x \geq y$$

5. Ans. (d)

Exp.

$$x = \pm 13$$

$$y = 13$$

$$\therefore y \geq x$$

6 Ans: B

Exp: Let total accounts opened by all five banks = $100x$

$$100x \times \frac{30}{100} = 100x \times \frac{20}{100} = 2.2 \text{ cr.}$$

$$30x - 20x = 2.1 \text{ cr}$$

$$x = 0.21 \text{ cr}$$

Total accounts opened by UBI

$$= 0.21 \times 100 \times \frac{11}{100}$$

$$= 3.15 \text{ cr}$$

7. Ans: A

Exp: Let total number of accounts opened by all five banks = $100x$

$$\text{Required ratio} = \frac{100x \times \frac{(80+10)}{100}}{100x \times \frac{20}{100}} = \frac{40x}{20x} = 2 : 1$$

8. Ans: E

Exp: Let total accounts opened by all five banks = $100x$

$$\text{Total accounts opened by BOB} = 100x \times \frac{25}{100} = 25x$$

$$\text{Total accounts opened by BOI} = 100x \times \frac{10}{100} = 10x$$

$$\text{Required percentage} = \frac{25x - 10x}{10x} \times 100 = 150\%$$

9. Ans: B

Exp: Let total accounts opened by all five bank = 100x

ATQ,

$$100x \times \frac{(10+15)}{100} = 3.6$$

$$x = 0.144 \text{ cr}$$

$$\text{Required difference} = 0.144 \times 100 \times \frac{(25-20)}{100} = 0.72 \text{ cr}$$

10. Ans: B

$$\text{Exp: Total number of accounts opened by SBI \& UBI} = 24 \times \frac{45}{100} = 10.8 \text{ cr}$$

$$\text{Required average} = \frac{10.8}{2} = 5.4 \text{ cr}$$

11.....

12. Ans: 4

Exp: Total no. of possible outcomes = 36

Possibility of getting sum of 9 = 4 [(3,6), (4,5), (5,4), (6,3)]

$$\text{So, required possibility} = \frac{4}{36} = \frac{1}{9}$$

13. Ans: B

$$\text{Exp: Sum of weight of P, Q, R and S} = 60 \times 4 = 240 \text{ kg}$$

$$\text{Sum of weight of P, Q, R, S and A} = 62 \times 5 = 310 \text{ kg}$$

$$\text{So, weight of A} = 310 - 240 = 70 \text{ kg}$$

$$\text{Sum of weight of Q, R, S, A and B} = 61 \times 5 = 305 \text{ kg}$$

$$\therefore \text{sum of weight of Q, R, S and B} = 305 - 70 = 235 \text{ kg}$$

14. Ans: B

Let total marks be x

$$0.37x + 78 = 0.42x + 48$$

$$0.05x = 30$$

$$x = 600$$

$$\text{passing marks} \Rightarrow 0.42 \times 600 + 48$$

$$\Rightarrow 300$$

ATQ,

$$48\% \text{ of } 600 = 288$$

$$\text{She will fail by } (300 - 288) = 12 \text{ marks}$$

15. Ans: A

	Price	×	Consumption	=	Expenditure
Before	→ 5	×	10	=	50
After	→ 4	×	13	=	52

$$\text{Required \% change} = \frac{2}{50} \times 100 = 4\% \text{ increase}$$

16. Ans: D

Let Prachi's present age be x and Yashi's present age be y

ATQ,

$$x - 6 = \frac{3}{2}(y + 2)$$

$$2x - 12 = 3y + 6$$

$$2x - 3y = 18 \quad \dots(i)$$

Also,

$$\frac{x + 8}{y + 8} = \frac{16}{9}$$

$$9x + 72 = 16y + 128$$

$$9x - 16y = 56 \quad \dots(ii)$$

Solving (i) & (ii)

$$x = 24, y = 10$$

Exp: Yashi's brother age = $10 + 2 = 12$ yrs

17. Ans: C

Exp: Probability of choosing a basket = $\frac{1}{2}$

Probability of Green ball from first basket = $\frac{1}{2} \times \frac{{}^9C_1}{{}^{15}C_1} = \frac{3}{10}$

Probability of Green ball from second basket = $\frac{1}{2} \times \frac{{}^8C_1}{{}^{15}C_1} = \frac{4}{15}$

Required probability = $\frac{3}{10} + \frac{4}{15} = \frac{17}{30}$

18. Ans: B

Since interest is compounded quarterly,

$$R = \frac{40}{4} \% = 10\%$$

$$T = 1 \times 4 = 4 \text{ years.}$$

$$\begin{aligned} \text{C.I.} &= 8000 \left(1 + \frac{10}{100}\right)^4 - 8000 \\ &= \text{Rs. } 3712.8 \end{aligned}$$

19. Ans: c

Let speed of boat in still water = x kmph
and speed of current = y kmph

ATQ,

$$x + y = 4y$$

$$x = 3y$$

$$\text{Now, } \frac{20}{x-y} = \frac{20}{4}$$

$$\frac{20}{2y} = 5 \Rightarrow y = 2 \text{ km/hr}$$

$$\text{Speed of boat in still water} = x = 6 \text{ km/hr}$$

20. Ans: D

Let C.P. of article be Rs. x

ATQ,

$$(700 - x) = \frac{8}{7}(650 - x)$$

$$4900 - 7x = 5200 - 8x$$

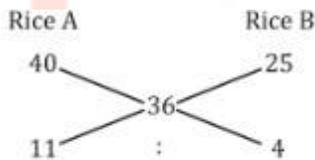
$$x = 300$$

S.P to earn 25% profit

$$= 300 \times \frac{125}{100}$$

Exp: = Rs. 375.

21. Ans: D



Quantity (Rice A) : Quantity (Rice B)

$$\text{Required ratio} = \frac{11}{15}$$

22. Ans: B

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

23. Ans: D

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

$$= 3564$$

24. Ans: A

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

$$= 7560$$

25. Ans: C

No. of votes by which winner won

$$= 13500 \times \frac{90}{100} \times \frac{80}{100} \left[\frac{60}{100} - \frac{40}{100} \right]$$
$$= 13500 \times \frac{90}{100} \times \frac{80}{100} \times \frac{20}{100}$$
$$= 1944$$

26. Ans: E

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

$$= 5760$$

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

$$= 5400$$

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

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

$$= 6\frac{2}{3}\%$$

No. of valid votes casted in village C were

: $6\frac{2}{3}\%$ more than in village A.

27.....

28. Ans: C

Exp: Second year C.I = $P \left[\left(1 + \frac{R}{100} \right)^2 - 1 \right] - P \times \frac{R}{100}$

$$= 6875 \times \frac{11}{25} - 6875 \times \frac{20}{100} = \text{Rs. } 1650$$

Required difference = $1650 \times \frac{20}{100} = \text{Rs. } 330$

29. Ans: A

Exp: let radius of cylinder is 'r' cm

$$\pi r^2 = 132$$

$$r^2 = \frac{132}{22} \times 7$$

$$r^2 = 42$$

Height of Cylinder = $\frac{42}{2} = 21\text{cm}$

Volume of Cylinder = $\pi r^2 h$

$$= 132 \times 21 = 2772 \text{ cm}^3$$

30. Ans: E

Exp: Let efficiency of Shyam = x unit/day

So, Ram's efficiency = $2x$ unit/day

Total work = $16 \times (2x + x) = 48x$

Time taken by Shyam = $\frac{48x}{x} = 48$ days

31. Logic: $*0.5+2, *1+2, *1.5+2..$

Ans: 122

32): Logic: $*1+1, *2+2, *3+3..$

Ans: 520

33) Logic: $+7, +14, +21..$

Ans: 2040

34): Logic: $+12, -24, +36..$

Ans: 496

35): Logic: $\div 2-9, \div 2-9, \div 2-9..$

Ans: 22

36. Ans: Option C

Explanation:

Average Speed = $\frac{2 \times 12 \times 15}{12+15}$

$D = S \times T = \frac{2 \times 12 \times 15}{27} \times 15 = 200$ KM

Quantity II: Speed difference for 1 hour = $40-30=10$ Kmph; means in 1 hour faster bus will cover 10 km more than slower one; hence to cover 30 km more it will take 3 hours.

Distance = Relative Speed * Time

$D = 3 \times (30+40)$

= 210 KM

II > I

37. Ans: Option A

Explanation: CI for 2 years on $20\% = \frac{1}{5}$

5

6

$5^3 = 125$ $6^3 = 216$
 $5^3 - 25 = 100$ $6^3 - 36 = 180$
 $CI = 36 - 25 = 11 = 1320$
 $Sum = 25 = 3000$
 Quantity II: Find Rate
 Cube root(125): Cube root (216)
 5:6
 $rate = \frac{6-5}{5} \times 100 = 20\% = \frac{1}{5}$

$5^3 = 125$ $6^3 = 216$
 $5^3 = 125$ $6^3 = 216$
 $5^3 = 125$ $6^3 = 216$
 $36 = 2880$; hence $25 = 2000$
 $I > II$

38. Option A

Explanation: $SP = 120/100 \times 24000 = 28800$
 Discount = $25\% = \frac{1}{4}$ (MP = 4, SP = 4-1=3)
 Gain = $16 \frac{2}{3}\% = \frac{1}{6}$ (CP = 6, SP = 6+1 = 7)
 Make SP same
 CP.....SP MP
 18.....21.....28
 $18 == 24000$
 So $21 == 28000$

39. Ans: Option A

Explanation:
 Quantity I. Volume of sphere = $\frac{4}{3} \times \text{Pie} \times R^3$
 $R=7$; Volume = 1437.33
 Quantity II: $V = a^3 = 8^3 = 512$
 $I > II$

40. Ans: A

Exp: Suppose B takes 'x' days,
 Then C will take '3x' days

$$\frac{1}{3x} + \frac{1}{x} = \frac{1}{22.5}$$

Or, $x = 30$

Now, Let A and B together take '2y' days,
 Then A will take '3y' days,

$$\frac{1}{3y} + \frac{1}{30} = \frac{1}{2y}$$

Or, $y = 5$

Hence, A will take $3y = 3 \times 5 = 15$ days.

Quantity I: 15 days

Quantity II: $\frac{90}{6+1} = 90/7$ days

So, Quantity I > Quantity II

