QUANTITATIVE APTITUDE

Questions asked in Corporation Bank P.O. Examination held on November 21, 2004

1. Three-fourth of a number is equal to 60% of another number. What is the difference between the numbers?
(1) 18 (2) 32 (3) 24
(4) Cannot be determined
(5) None of these

2. Abhijit invested in three schemes A, B and C the amounts in the ratio of 2 : 3 : 4 respectively. If the schemes offered interest @ 20 p.c.p.a, 16 p.c.p.a. and 15 p.c.p.a. respectively, what will be the respective ratio of the amounts after one year?
(1) 10 : 8 : 5 (2) 12 : 14 : 15 (3) 12 : 15 : 22
(4) Cannot be determined
(5) None of these

3. A train crosses a 300 metre long platform in 38 seconds while it crosses a signal pole in 18 seconds. What is the speed of the train in kmph?
(1) Cannot be determined
(2) 72 (3) 48 (4) 54 (5) None of these

4. If $2x + 5y = 109$ and $2x + 5 = y + 12$ then $y - x = ?$
(1) 7 (2) 6 (3) 8 (4) 9 (5) None of these

5. Four of the following five parts numbered (1), (2), (3), (4) and (5) are exactly equal. The number of the part, which is not equal to the other four parts, is your answer.
$45 \times 12 + 60 =$ 80% of 800 $- 40 =$ 3/5 of 1200 $- 150$
(1) (2) (3)
$= 1260 \div 3 + 180 = 8640 \div 16 + 60$
(4) (5)

6. Certain number of pieces of an article are to be packed in boxes, such that each box contains 145 pieces. If after packing them in 32 boxes 25 pieces are left out, what was the number of pieces to be packed?
(1) 4566 (2) 4655 (3) 4465
(4) 4640 (5) None of these

7. Which of the following set of fractions is in ascending order?
(1) $\frac{13}{15}, \frac{11}{13}, \frac{7}{8}, \frac{8}{9}$ (2) $\frac{11}{13}, \frac{13}{15}, \frac{7}{8}, \frac{8}{9}$
(3) $\frac{8}{9}, \frac{7}{8}, \frac{13}{15}, \frac{11}{13}$ (4) $\frac{7}{8}, \frac{8}{9}, \frac{11}{13}, \frac{13}{15}$
(5) None of these

8. 3 girls and 4 boys are to be seated in a row on 7 chairs in such a way that all the three girls always sit together. In how many different ways can it be done?
(1) 720 (2) 576 (3) 144
(4) 480 (5) None of these

9. In how many different ways can the letters of the word DRASTIC be arranged in such a way that the vowels always come together?
(1) 720 (2) 360 (3) 1440 (4) 540 (5) None of these

10. Area of a circle is equal to the area of a rectangle having perimeter of 50 cms and length more than the breadth by 3 cms. What is the diameter of the circle?
(1) 7 cms (2) 21 cms (3) 28 cms
(4) 14 cms (5) None of these

Qs. 11-15. What will come in place of the question mark (?) in following equations?

11. $\frac{3}{8}$ of $\frac{4}{7}$ of $\frac{7}{9}$ of $738 = ?$
(1) 123 (2) 132 (3) 142 (4) 143 (5) None of these

12. $3\frac{2}{5} \times \frac{4}{17} + 1\frac{2}{3} \times \frac{2}{15} = ?$
(1) $2\frac{1}{45}$ (2) $1\frac{1}{45}$ (3) $1\frac{1}{9}$
(4) $1\frac{2}{5}$ (5) None of these

13. 135% of 480 + ?% of 320 = 728
(1) 25 (2) 28 (3) 125 (4) 115 (5) None of these

14. $\frac{36}{?} = \frac{90}{195}$
(1) 76 (2) 72 (3) 78 (4) 84 (5) None of these

15. $323.001 \times 15 + ? = 5000.015$
(1) 145.014 (2) 155 (3) 145
(4) 155.014 (5) None of these

Qs. 16-20. What **approximate** value will come in place of the question mark (?) in following equations?

16. 35% of 121 + 85% of 230.25 = ?
(1) 225 (2) 230 (3) 240 (4) 245 (5) 228

17. $3.2 \times 8.1 + 3185 \div 4.95 = ?$
(1) 670 (2) 660 (3) 645 (4) 690 (5) 685

18. $2508 \div 15.02 + ? \times 11 = 200$
(1) 13 (2) 8 (3) 3 (4) 4 (5) 6

19. $42.07 \times 7.998 + (?)^2 = 20^2$
(1) 6 (2) 12 (3) 32 (4) 64 (5) 8

20. $2375.85 \div 18.01 - 4.525 \times 8.05 = ?$
(1) 105 (2) 96 (3) 88 (4) 90 (5) 112

Qs. 21-25. What will come in place of question mark (?) in each of the following number series?

21. 445 ? 21 6 2

(1) 89 (2) 88 (3) 98 (4) 99 (5) None of these

22. 11 36 ? 178 364

(1) 86 (2) 92 (3) 74 (4) 84 (5) None of these

23. 8 36 144 504 ?

(1) 1512 (2) 1296 (3) 1728 (4) 1664 (5) None of these

24. 5 6 20 ? 412

(1) 92 (2) 85 (3) 95 (4) 87 (5) None of these

25. 23 36 95 343 ?

(1) 1541.5 (2) 1551.5 (3) 1561.5

(4) 1543.5 (5) None of these

Qs. 26-30. Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer:

(1) if the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

(2) if the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

(3) if the data either in statement I alone or in statement II alone is sufficient to answer the question.

(4) if the data in both the statements I and II together are not sufficient to answer the question.

(5) if the data in both the statements I and II together are necessary to answer the question.

26. What is the rate of interest p.c.p.a.?

I. Simple interest earned in 3 years is Rs X.

II. The amount increases by 80% in 5 years.

27. What is the speed of the current?

I. A man can swim a distance of 9 kms in 1½ hrs down streams.

II. While coming back up streams it takes him 3 hours to cover the same distance.

28. How many children are there in the class?

I. Boys and girls are in the ratio of 8 : 5 respectively and number of girls is less than that of boys by 24.

II. Number of girls in the class is 40.

29. What is the two digit number?

I. Difference between the digits is 7.

II. Sum of the digits is 11.

30. How much time will Ravindra take to complete one round, cycling around the boundary of a circular ground?

I. Speed of cycling is 12 kmph.

II. Diameter of the ground is 700 metres.

Q. 31-35. In each of the following questions two equations I and II are given. You have to solve both the equations and give answer:

(1) if $x > y$ (2) if $x \leq y$ (3) if $x < y$

(4) if $x \geq y$ (5) if $x = y$

31. I. $9x^2 - 36x + 35 = 0$

II. $3y^2 - 16y + 21 = 0$

32. I. $2x^2 + 3x + 1 = 0$

II. $2y^2 + 7y + 6 = 0$

33. I. $2x^2 - 17x + 35 = 0$

II. $2y^2 - 13y + 21 = 0$

34. I. $2x - y = 3$

II. $2y - x = 15$

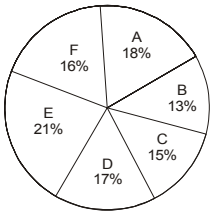
35. I. $20x^2 - 9x + 1 = 0$

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

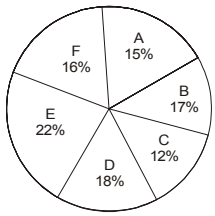
Qs. 36-40. Study the following graphs carefully to answer these questions.

Quantity of various items produced and the amount earned by selling them

Quantity produced
Total = 2000 tons



Income by selling the products
Total = Rs 45 millions



36. If the expenditure incurred in production of product 'C' per ton was Rs 16000, what was the per cent profit earned?

(1) 12.5 (2) 11.11 (3) 12.25

(4) 11.28 (5) None of these

37. What is the average per ton selling price of all the six products together?

(1) Rs 20,525 (2) Rs 18,500 (3) Rs 22,500

(4) Rs 20,500 (5) Rs 18,525

38. What is the selling price of product 'A' per ton?

(1) Rs 17,580 (2) Rs 18,570 (3) Rs 17,850

(4) Rs 18,750 (5) None of these

39. **Approximately,** what was the average selling price per ton of products D and E together?

(1) Rs 21,800 (2) Rs 22,800 (3) Rs 22,000

(4) Rs 22,500 (5) Rs 23,500

40. Which product has the highest selling price per ton?

(1) A (2) B (3) C (4) D (5) None of these

Qs. 41-45. Study the following table to answer these questions.

Number of Officers in various Departments of an Organization in different Scales

Dept / Scale	Personnel	Operations	Systems	Accounts	Maintenance	Public Relations
I	225	725	750	300	325	175
II	120	426	576	288	240	150
III	75	250	320	120	85	100
IV	40	126	144	60	30	50
V	25	65	70	35	20	35
VI	4	20	28	15	8	5

41. What is the ratio between the total number of employees in Scale III and Scale IV respectively?

(1) 19 : 9 (2) 9 : 19 (3) 17 : 9
(4) 9 : 17 (5) None of these

42. Total number of employees in Scale VI is what per cent of the total number of employees in Scale I?
(1) 2.8 (2) 2.4 (3) 3.6
(4) 3.2 (5) None of these

43. In Public Relations department the number of employees in Scale II is less than that in Scale I by what per cent? (rounded off to two digits after decimal).
(1) 14.67 (2) 16.67 (3) 14.29
(4) 16.27 (5) None of these

44. Out of the total number of employees in 'Personnel' department, **approximately** what per cent employees are in Scale II?
(1) 30 (2) 28 (3) 22
(4) 20 (5) 25

45. What percentage of Scale IV officers are deployed in 'Operations' department?
(1) 26.5 (2) 28 (3) 28.5
(4) 27 (5) None of these

ANSWERS AND EXPLANATIONS

1. (4)
2. (5) Reqd ratio $2x \times \frac{120}{100} : 3x \times \frac{116}{100} : 4x \times \frac{115}{100}$
$= 60 : 87 : 115$
3. (4) Let length of a train be x m
$\therefore$ Speed $= \frac{x}{18} = \frac{x+300}{38} \Rightarrow x = 270$ m
$\therefore$ Speed $= \frac{270}{18}$ m/sec $= \frac{270}{18} \times \frac{18}{5} = 54 km/hr$
4. (5) Solving the eqns, x = 12, y = 17 $\therefore$ y – x = 5
5. (3) Each part except (3) = 600
6. (5) 145 × 32 + 25 = 4665
7. (2)
8. (1) Consider 3 girls as 1 person
Now (4+1) *i.e.* 5 persons can sit in 5! ways,
3 girls themselves can be arranged in 3! ways
$\therefore$ Total no. of ways in which girls always sit together
$= 5! \times 3! = 120 \times 6 = 720$
9. (3) 2 vowels can be arranged in 2! = 2 ways
Consider 2 vowels as one letter.
Now 6 letters [D, R, S, T, C, (AI)] can be arranged in 6! ways
$\therefore$ Total no. of ways = $2 \times 6! = 1440$
10. (4) Perimeter of a rect = $50 = 2(x + 3 + x) \Rightarrow x = 11$
L = 11 + 3 = 14, B = 11
$\therefore$ Area of a rect = $14 \times 11 = 154$ cm^2
Area of a circle = 154 cm^2
$\therefore r = \sqrt{A \div \pi} = \sqrt{154 \times \frac{7}{22}} = 7$
$\therefore$ D = 2r = 14 cm
11. (1) 12. (2) 13. (1) 14. (3) 15. (2)
16. (3) 17. (1) 18. (3) 19. (5) 20. (2)
21. (2) 445 x 21 6 2
$\frac{445}{5} - 1 = 88, \frac{88}{4} - 1 = 21, \frac{21}{3} - 1 = 6, \frac{6}{2} - 1 = 2$
Reqd No. = 88
22. (4) 11, 36, x, 178, 364
$11 \times 2 + 14 = 36$, $36 \times 2 + 12 = 84$, $84 \times 2 + 10 = 178$,
$178 \times 2 + 8 = 364$.
Reqd no. = 84
23. (1) $8 \times \frac{9}{2} = 36$, $36 \times 4 = 144$, $144 \times \frac{7}{2} = 504$,
$504 \times 3 = 1512$
24. (4) $5 \times 1 + 1^3 = 6$, $6 \times 2 + 2^3 = 20$, $20 \times 3 + 3^3 = 87$,
$87 \times 4 + 4^3 = 412$.
Reqd no. = 87
25. (3) $(23 + 1) \times \frac{3}{2} = 36$,

$(36 + 2) \times \frac{5}{2} = 95,$

$(95 + 3) \times \frac{7}{2} = 343,$

$(343 + 4) \times \frac{9}{2} = 1561.5$

26. (2) Let P = Rs 100
$\therefore$ I = 80 T = 5 years
$R = \frac{100 \times 80}{100 \times 5} = 16$ pcpa

27. (5) $\frac{9}{\frac{3}{2}} = x + y, \frac{9}{3} = x - y$

Solving both the equations we can find y (speed of current)

28. (1) B : G = 8 : 5 diff = 3
Children = 8 + 5 = 13
If difference = 24 then total children
$= \frac{13}{3} \times 24 = 104$

29. (5)

30. (5) $T = \frac{D}{S}$

31. (2) $9x^2 - 36x + 35 = 0$
$\Rightarrow (3x - 5)(3x - 7) = 0$
$\Rightarrow x = \frac{5}{3}, \frac{7}{3}$

$3y^2 - 16y + 21 = 0 \Rightarrow 3y^2 - 9y - 7y + 21 = 0$
$\Rightarrow (y - 3)(3y - 7) = 0 \Rightarrow y = 3, \frac{7}{3}$

$\therefore x \le y$

32. (1) $2x^2 + 3x + 1 = 0 \Rightarrow (2x + 1)(x + 1) = 0$
$\Rightarrow x = -\frac{1}{2}, -1$

$2y^2 + 7y + 6 = 0 \Rightarrow y = -2, -\frac{3}{2}$

$\therefore x > y$

33. (4) $2x^2 - 17x + 35 = 0$
$\Rightarrow (2x - 7)(x - 5) = 0$
$\Rightarrow x = +5, \frac{7}{2}$

$2y^2 - 13y + 21 = 0 \Rightarrow (2y - 7)(y - 3) = 0$
$\Rightarrow y = \frac{7}{2}, 3$

$\therefore x \ge y$

34. (3) $2x - y = 3$
$-x + 2y = 15 \ \therefore \ -2x + 4y = 30$
Solving y = 11, x = 7
$\therefore x < y$

35. (3) $20x^2 - 9x + 1 = 0 \Rightarrow x = \frac{1}{4}, \frac{1}{5}$

$9y^2 - 9y + 2 = 0 \Rightarrow y = \frac{1}{3}, \frac{2}{3}$

$\therefore x < y$

36. (1) Quantity produced by C = $2000 \times \frac{15}{100} = 300$ tons

Exp = 16000 × 300 = 4800000
Income by selling = $45000000 \times \frac{12}{100}$
= Rs 5400000
Profit = 5400000 – 4800000 = Rs 600000
$P\% = \frac{600000}{4800000} \times 100 = 12.5$

37. (3) $\frac{45000000}{2000}$ = Rs 22,500

38. (4) Reqd price = $\frac{45000000 \times \frac{15}{100}}{2000 \times \frac{18}{100}} = \text{Rs}\,18750$

39. (5) $\frac{45000000 \times \frac{(22+18)}{100}}{2000 \times \frac{(21+17)}{100}}$

40. (2) S.P./ton of A = $\frac{45000000}{2000} \times \frac{15}{18}$

S.P./ton of B = $\frac{45000000}{2000} \times \frac{17}{13}$

S.P./ton of C = $\frac{45000000}{2000} \times \frac{12}{15}$

S.P./ton of D = $\frac{45000000}{2000} \times \frac{18}{17}$

S.P./ton of E = $\frac{45000000}{2000} \times \frac{22}{21}$

Out of $\frac{15}{18}, \frac{17}{13}, \frac{12}{15}, \frac{18}{17}, \frac{22}{21}, \frac{17}{13}$ is highest

$\therefore$ Ans (2)

41. (1)

42. (4) $\frac{80}{2500} \times 100 = 3.2$

43. (3) No. of emp. in I and II are 175 and 150 respectively
Reqd %age = $\frac{25}{175} \times 100 = 14.29$

44. (5) 45. (2)