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Test 1: 25 questions 20 minutes

Test 2: 25 questions 40 minutes

The following pie-charts show the percentage distribution of the total employees of two Companies A and B in different departments, and the table shows the ratio of Male to Female employees in all the departments of Company A and B. The total number of employees working in Company A and B are 8000 and 7500 respectively.

	Company A	Company B	Company A Company B
	Male : Female	Male : Female	Profile Plant Plant
D1	5:3	13:7	
D2	9:7	11:14	D5 20% 24%
D3	5:7	7:8	10% D5
D4	8:7	17:13	17%
D5	3:2	23:27	21% D2 16%
D6	9:5	7:3	D4 18% D4 18%
			D3 D3

1. What is the total number of Female employees in D5 of Company A and B together? (a) 705 (b) 710 (c) 715 (d) 720 (e) 725

The total number of Female employees in D1 of Company B is approximately how much per cent more than the number of Female employees in D1 of Company A?
 (a) 5% (b) 7.5% (c) 15% (d) 22.5% (e) 30%

3. What is the difference between the total Male employees of Company A and the total Female employees of Company B?
(a) 1230 (b) 1232 (c) 1234 (d) 1236 (e) 1238

4. The average number of Male employees in D1 and D2 of Company B is approximately what percentage of the average number of Female employees in D5 and D6 of Company A? (a) 177.5% (b) 197.5% (c) 212.5% (d) 217.5% (e) 227.5%

5. The total number of Females working in Company A is approximately what percentage of total employees of Company A?(a) 42.12% (b) 43.48% (c) 44.24% (d) 45.64% (e) 46.86%



Study the following information carefully and answer the questions given below:

In an institute there are 5600 students, the ratio of the number of girls to the number of boys is 3 : 4 respectively. All the students are enrolled in different programmes viz. SSC, Banking, CLAT and F–CAT. 20% of the total number of boys are enrolled in CLAT programme. The number of girls enrolled in Banking is five–fourths of the number of boys taking the same.

One fourth of the total number of girls enrolled in F–CAT programme. The total number of students enrolled in F–CAT programme is 1400. Two–fifths of the boys enrolled in SSC programme and the remaining boys are enrolled in Banking programme. The girls enrolled in SSC are three fourth of the number of boys enrolled in the same. The remaining girls are enrolled in CLAT programme.

6. What is the respective ratio of the number of boys enrolled in CLAT to the number of boys enrolled in SSC?

1) 1 : 2 2) 1 : 3 3) 2 : 3 4) 4 : 5 5) 3 : 4

7. What is the number of girls enrolled in CLAT? 1) 210 2) 260 3) 280 4) 180 5) 240

8. What is the total number of students enrolled in Banking? 1) 1060 2) None of these 3) 1080 4) 1040 5) 1020

9. The number of girls enrolled in F–CAT is approximately what percent of the total number of students enrolled in SSC? 1) 24.8% 2) 26.8% 3) 36.8% 4) 32.9% 5) 29.4%

10. The number of boys enrolled in CLAT and SSC together is approximately what percent more or less than the number of girls enrolled in SSC?

- 1) 100% more 2) 100% less 3) 125% more 4) Other than given options 5) 75% less
- 11. Question: What will be the total weight of 10 poles, each of the same weight ? Statements:
- I. One-fourth of the weight of each pole is 5 kg.
- II. The total weight of three poles is 20 kilograms more than the total weight of two poles.
- a) I alone is sufficient while II alone is not sufficient
- b) Il alone is sufficient while I alone is not sufficient
- c) Either I or II is sufficient
- d) Neither I nor II is sufficient
- e) Both I and II are sufficient

12. What is the two-digit number whose first digit is a and the second digit is b?. The number is greater than 9.

I. The number is multiple of 51.

II. The sum of the digits a and b is 6.

- a) I alone sufficient while II alone not sufficient to answer
- b) II alone sufficient while I alone not sufficient to answer
- c) Either I or II alone sufficient to answer
- d) Both I and II are not sufficient to answer
- e) Both I and II are necessary to answer

13. To find out the share of Y out of Rs 1820, which of the following statements is/are sufficient/necessary?

- A. The share of X is 1.8 times the combined share of Y and Z.
- B. The share of Y is 3/11 of the combined share of X and Z.
- C. The share of Z is 1/6of the combined share of X and Y.
- (a) Statements A and B together are sufficient
- (b) Statement A and C together are sufficient
- (c) Statements B and C together are sufficient



- (d) Either statement B alone or statements A and C together are sufficient
- (e) None of these

14. A sum of money Rs 2550 is to be distributed among Knahiya, Varun and Rajneesh. What will be the share of Varun?

- A. Knhiya's share is 1.5 times Varun's share.
- B. Rajneesh's share is half the share of Knahiya and Varun together.
- c. The share of Knahiya is Rs 340 more than Varun.
- (a) Either A and B or A and C together are sufficient
- (b) Only A and B (c) Only A and C (d) All are required
- (e) Even all together are not sufficient
- 15. To find the temperature on Monday which of the following information is sufficient?
- A. The average temperature for Monday, Tuesday and Wednesday was 38° C.
- B. The average temperature for Tuesday, Wednesday and Thursday was 43° C.
- c. The temperature on Tuesday and Thursday was 45° C each.
- (a) Only A and B are sufficient (b) Only B and C
- (c) A and either B or C (d) C and either A or B
- (e) All the three together are sufficient

Find the odd number in the following number series?

- 16. 550, 550, 549, 544, 515, 330 (a) 549 (b) 544 (c) 515 (d) 330 (e) 550
- 17. 450, 900, 500, 800, 640, 760 (a) 900 (b) 600 (c) 800 (d) 640 (e) 760

What will come in place of question mark (?) in the following series? 18. 23 25 30 40 57 ?

(a) 63 (b) 72 (c) 83 (d) 93 (e) 102

19. 13 24 92 546 4360 ? (a) 47582 (b) 43590 (c) 54280 (d) 32590 (e) 63200

Directions: What will come in place of question mark(?) in the following questions? 20. $(180 \times 15 - 12 \times 20) / (140 \times 8 + 2 \times 55) = ?$ 1) 1 2) 2 3) 3 4) 4 5) 5

21. (3/8) of 168 × 15 ÷ 5 + ? = 549 ÷ 9 + 235 1) 105 2) 160 3) 107 4) 180 5) 140

Compare Quantity x and Quantity y, using additional information centered above the two quantities if such information is given, and select one of the following four answer choices: A if x > yB if $x \le y$ C if $x \ge y$

D if x < y

E if x = y or relationship between x and y can't be

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established

22. I. 11x + 64/x = 54II. $12y^2 + 40y + 17 = 0$

23. l. $84x^2 + 115x + 26 = 0$ ll. $27y^2 + 36y - 15 = 0$

24. l. $24x^2 + 25x - 11 = 0$ ll. $45y^2 + 36y + 7 = 0$

25. I. $6x^2 - 23\sqrt{3x} + 60 = 0$ II. $2y^2 + 3\sqrt{3y} - 15 = 0$



Solutions

The following pie-charts show the percentage distribution of the total employees of two Companies A and B in different departments, and the table shows the ratio of Male to Female employees in all

	Company A	Company B	
	Male : Female	Male : Female	
D1	5:3	13:7	
D2	9:7	11:14	
D3	5:7	7:8	
D4	8:7	17:13	
D5	3:2	23:27	
D6	9:5	7:3	



the departments of Company A and B. The total number of employees working in Company A and B are 8000 and 7500 respectively.

6. What is the total number of Female employees in D5 of Company A and B together?
(a) 705 (b) 710 (c) 715 (d) 720 (e) 725

6. (e)

Number of Female employees of Company A in department D5 = $8000 * \frac{10}{100} * \frac{2}{5} = 320$ Number of Female employees of

Company B in department D5

$$= 7500 * \frac{10}{100} * \frac{27}{50} = 405$$

Total = 320 + 405 = 725

8. (b)

Total Male employees of Company A = 1000 + 765 + 600 + 896 + 480 + 720 = 4461 Total Female employees of Company B = 630 + 504 + 720 + 520 + 405 + 450 = 3229 Difference = 4461 - 3229 = 1232

7. The total number of Female employees in D1 of Company B is approximately how much per cent more than the number of Female employees in D1 of Company A?
(a) 5% (b) 7.5% (c) 15% (d) 22.5% (e) 30%

7. (a) Number of Female employees in department D1 of Company B = 7500 * $\frac{24}{100}$ * $\frac{7}{20}$ = 630 Number of Female employees in department D1 of Company A = 8000 * $\frac{20}{100}$ * $\frac{3}{8}$ = 600 Required % = $\frac{630-600}{600}$ * 100 = 5%

8. What is the difference between the total Male employees of Company A and the total Female employees of Company B?

(a) 1230 (b) 1232 (c) 1234 (d) 1236 (e) 1238



9. The average number of Male employees in D1 and D2 of Company B is approximately what percentage of the average number of Female employees in D5 and D6 of Company A? (a) 177.5% (b) 197.5% (c) 212.5% (d) 217.5% (e) 227.5%

9. (d)

Average number of male employees in D1and D2 of Company B $= \frac{1170 + 396}{2} = \frac{1566}{2} = 783$ Average of female employee in D5 and D6 of Company A $= \frac{320 + 400}{2} = \frac{720}{2} = 360$ Required % = $\frac{783}{360} * 100 = 217.5\%$

10. The total number of Females working in Company A is approximately what percentage of total employees of Company A?

(a) 42.12% (b) 43.48% (c) 44.24% (d) 45.64% (e) 46.86%



10. (c) Total number of Female employees of Company A = 600 + 595 + 840 + 784 + 320 + 400 = 3539 Total employees of company A = 8000 Required % = $\frac{3539}{8000}$ * 100 = 44.24%

Study the following information carefully and answer the questions given below:

In an institute there are 5600 students, the ratio of the number of girls to the number of boys is 3: 4 respectively. All the students are enrolled in different programmes viz. SSC, Banking, CLAT and F–CAT. 20% of the total number of boys are enrolled in CLAT programme. The number of girls enrolled in Banking is five–fourths of the number of boys taking the same.

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6. What is the respective ratio of the number of boys enrolled in CLAT to the number of boys enrolled in SSC? 1) 1:22) 1:33) 2:34) 4:55) 3:4

7. What is the number of girls enrolled in CLAT? 1) 210 2) 260 3) 280 4) 180 5) 240

8. What is the total number of students enrolled in Banking?

1) 1060 2) None of these 3) 1080 4) 1040 5) 1020

9. The number of girls enrolled in F–CAT is approximately what percent of the total number of students enrolled in SSC?

1) 24.8% 2) 26.8% 3) 36.8% 4) 32.9% 5) 29.4%

10. The number of boys enrolled in CLAT and SSC together is approximately what percent more or less than the number of girls enrolled in SSC?

1) 100% more 2) 100% less 3) 125% more

4) Other than given options 5) 75% less



6. 1

GirlsBoysSSC $\frac{3}{4} \times 1280 = 960$ $\frac{2}{5} \times 3200 = 1280$ Banking600480CLAT240 $\frac{20}{100} \times 3200 = 640$ F-CAT $\frac{1}{4} \times 2400 = 600$ 1400 - 600 = 800
Required ratio = 640 : 1280 = 1 : 2

7.5

Required answer = 240 8.3Required answer = 600 + 480 = 1080

9. 2

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Required percentage = 600/(1280+960)*100=600/2240
* 100 = 26.8%
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10. 1 Required percentage more = {(1280+640)-960}/960* 100 = 100% more

11. C

From I, we conclude that weight of each pole = (4x5) kg = 20 kg.

So, total weight of 10 poles = (20×10) kg = 200 kg.

From II, we conclude that:

Weight of each pole = (weight of 3 poles) - (weight of 2 poles) = 20 kg.

So, total weight of 10 pojes = (20×10) kg = 200 kg.

12. From statement I:

A two digit number, greater than 9 and multiple of 51 should be 51 itself.

Because, $2 \times 51 = 102$ (3 digit number). Therefore, I alone sufficient to answer.

From statement II:

A two digit number, greater than 9 and sum of the digit is 6.



It can be 15, 24, 33, 42, 51. So we cannot determine the required answer from the statement II alone.

Thus, I alone give the answer while II alone not sufficient to answer.



13.To find out the share of Y out of Rs 1820, which of the following statements is/are sufficient/necessary?

- A. The share of X is 1.8 times the combined share of Y and Z.
- B. The share of Y is3/11 of the combined share of X and Z.
- c. The share of Z is 1/6of the combined share of X and Y.
- (a) Statements A and B together are sufficient
- (b) Statement A and C together are sufficient
- (c) Statements B and C together are sufficient
- (d) Either statement B alone or statements A and C together are sufficient
- (e) None of these

S1. Ans.(e) Sol.

Only statement B is sufficient Y: (X + Z) = 3 : 11

 $\therefore Y = \frac{3}{(3+11=)14} \times 1820 = 3 \times 130 = \text{Rs. 390}$

14.A sum of money Rs 2550 is to be distributed among Knahiya, Varun and Rajneesh. What will be the share of Varun?

- A. Knhiya's share is 1.5 times Varun's share.
- B. Rajneesh's share is half the share of Knahiya and Varun together.
- c. The share of Knahiya is Rs 340 more than Varun.
- (a) Either A and B or A and C together are sufficient
- (b) Only A and B (c) Only A and C (d) All are required
- (e) Even all together are not sufficient

S2. Ans.(a) Sol. $A \rightarrow K: V = 3:2$ $B \rightarrow K: V: R = 3:2:\frac{5}{2} = 6:4:5$ (from A) $C \rightarrow K - V = 340$ By combining either A and B together or A and

C together, the share of Vijay can be calculated.

15.To find the temperature on Monday which of the following information is sufficient?

- A. The average temperature for Monday, Tuesday and Wednesday was 38° C.
- B. The average temperature for Tuesday, Wednesday and Thursday was 43° C.
- c. The temperature on Tuesday and Thursday was 45° C each.
- (a) Only A and B are sufficient (b) Only B and C
- (c) A and either B or C (d) C and either A or B
- (e) All the three together are sufficient

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S3. Ans.(e)
Sol.
A \Rightarrow M + T + W = 114
B \Rightarrow T + W + Th = 129
C \Rightarrow T = Th = 45
From A, B and C, we will get M = 30<sup>0</sup>
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306

768



DI DS DC Workshop 16 17. 550, 550, 549, 544, 515, 306 (a) 549 (b) 544 (c) 515 (d) 306 (e) 550 S11. Ans.(d) Sol. 550 550 549 544 515 +1-6 +1-30 +1-210 ΤI +1-1+1-2 ×7 $\times 2$ 450, 900, 600, 800, 640, 768 (a) 900 (b) 600 (c) 800 (d) 640 (e) 768 S12. Ans.(e) Sol. 640 900 600 800 450 x = 18. Series Pattern Given Series 23 23 23 + (12 + 1) = 2525 25 + (22 + 1) = 3030 30 + (32 + 1) = 4040 40 + (42 + 1) = 5757 57 + (52 + 1) = 8383

19. Series Pattern **Given Series** 13 13 $13 \times 2 - 2 = 24$ 24 $24 \times 4 - 4 = 92$ 92 $92 \times 6 - 6 = 546$ 546 $546 \times 8 - 8 = 4360$ 4360 $4360 \times 10 - 10 = 43590$ 43590

20 Correct Option: B By the applying BODMAS rule, we get Given expression = $(2700 - 240) / (1120 + 110) \Rightarrow (2460 / 1230) \Rightarrow 2$

21. Correct Option: C Let (3/8) of $168 \times 15 \div 5 + A = 549 \div 9 + 235$ Then, $63 \times 15 \div 5 + A = 549 \div 9 + 235$ \Rightarrow 63 x 3 + A = 61 + 235 \Rightarrow 189 + A = 296, A = 107.

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Correct Option: A I. 11x + 64/x = 54 $\Rightarrow 11x^2 - 54x + 64 = 0$ $11x^2 - 22x - 32x + 64 = 0$ 11x(x-2) - 32(x-2) = 0 $x = 2 \text{ or } x = \frac{32}{11}$ II. $12y^2 + 40y + 17 = 0$ $12y^2 + 6y + 34y + 17 = 0$ 6y (2y + 1) + 17 (2y + 1) = 0 $y = -\frac{1}{2}$ or $y = -\frac{17}{6}$ $\therefore x > y$ Hence, option A is correct. 23. Correct Option: E $1.84x^2 + 115x + 26 = 0$ $84x^2 + 91x + 24x + 26 = 0$ 7x(12x + 13) + 2(12x + 13) = 0 $\Rightarrow x = -\frac{2}{7}$, or $-\frac{13}{12}$

II. $27y^2 + 36y - 15 = 0$

 $27y^2 + 45y - 9y - 15 = 0$

9y (3y + 5) - 3 (3y + 5) = 0

$$y = \frac{1}{3}, -\frac{5}{3}$$

.. There is no relationship between x and y.

Hence, option E is correct.

24.



Correct Option: E I. $24x^2 + 25x - 11 = 0$ $24x^2 - 8x + 33x - 11 = 0$ 8x (3x - 1) + 11(3x - 1) = 0 $\Rightarrow x = \frac{1}{3}, -\frac{11}{8}$ II. $45y^2 + 36y + 7 = 0$ $45y^2 + 15y + 21y + 7 = 0$ 15y (3y + 1) + 7(3y + 1) = 017

$$y = -\frac{1}{3}, -\frac{7}{15}$$

.: There is no relationship between x and y.

Hence, option E is correct.

25.

I. $6x^2 - 23\sqrt{3}x + 60 = 0$ $6x^2 - 8\sqrt{3}x - 15\sqrt{3}x + 60 = 0$ $2x(3x - 4\sqrt{3}) - 5\sqrt{3}(3x - 4\sqrt{3}) = 0$ $(2x - 5\sqrt{3})(3x - 4\sqrt{3}) = 0$ $x = 2.5\sqrt{3}, 1.33\sqrt{3}$ II. $2y^2 + 3\sqrt{3}y - 15 = 0$ $2y^2 + 5\sqrt{3}y - 2\sqrt{3}y - 15 = 0$ $y (2y + 5\sqrt{3}) - \sqrt{3}(2y + 5\sqrt{3}) = 0$ $(2y + 5\sqrt{3})(y - \sqrt{3}) = 0$ $y = \sqrt{3}, -2.5\sqrt{3}$

Therefore, for any value of x and any value of y

x > y

Hence, option A is correct.