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The Question Bank

Important quantitative aptitude questions for LIC Assistant Pre.

Direction (1-10): Read the following questions carefully and choose the right answer.

1. 200 men and 350 women can do a work in 40 days. 70 men and 100 women can do the same work in 'D' days. 50 men and 110 women can do the same work in 150 days. Find the value of 'D'.

A. 80 B. 60 C. 50 D. 120 E. 90

2. Anil and Mukesh entered into a business and invested money in the ratio 2 : 3. Find the value of Anil's share, if the ratio of time period of their investments is 3 : 2 respectively and the total profit is Rs. 10000.

A. Rs. 3950 B. Rs. 5550 C. Rs. 5000 D. Rs. 3000 E. None of these

3. P.T. Usha and Dutee Chand take part in a 100 metre race. P.T. Usha runs at a speed of 5 m/s. P.T. Usha gives Dutee Chand a start of 4 metre and still beats him by 4 seconds. Find the speed of Dutee Chand.

A. 4 m/s B. 5 m/s C. 6 m/s D. 5.5 m/s E. 4.5 m/s

4. Find the cost price of the article having marked price Rs.400, which when sold at 20% discount still gives a profit 20/3%?

A. Rs. 300 B. Rs. 200 C. Rs. 320 D. Rs. 340 E. Rs. 240

5. The cost per kilogram of pomegranate is Rs. 15 and that of pineapple is Rs. 10. Raghu purchased 60 kilograms of pomegranate and pineapple together for Rs. 700. The quantity of pomegranate purchased by Raghu is___.

A. 25 kg B. 20 kg C. 22 kg D. 28 kg E. 30 kg

6. After 4 years, the sum of ages of Ashish, Bhuvan and Chanchlani will be 98 years. What will be the age of Chanchlani after 4 years, if the present age of Ashish and Bhuvan is 32 years and 23 years respectively?

A. 31 years B. 32 years C. 35 years D. 37 years E. 33 years

7. Find the interest earned after three years, if a person invests Rs. 293 at simple interest at the rate of 21% per annum.

A. Rs.148.60 B. Rs.184.59 C. Rs.242.37 D. Rs.221.93 E. None of these

8. A horse covers a certain distance at 20 km/h and another distance that is 3 times of the earlier distance at 80 km/h. Find the average speed of the horse.

A. $45\frac{5}{7}$ km/h B. $35\frac{5}{7}$ km/h C. $45\frac{7}{5}$ km/h D. $42\frac{5}{7}$ km/h E. None of these

9. 3 inlet taps T1, T2 and T3 can fill a tank in six hours. After working together for two hours, T3 is closed and T1 and T2 fill the remaining part of the tank in 8 hours. Find the time taken to fill the whole tank by T1 and T2.

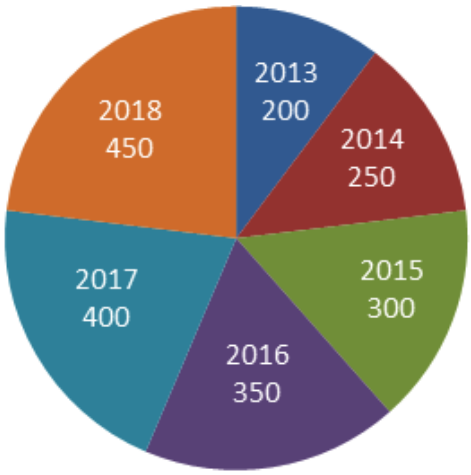
A. 10 hours B. 14 hours C. 8 hours D. 12 hours E. None of these

10. In a set of seven consecutive even numbers, the largest number is 40% more than the smallest number. Find the average of the set of numbers.

A. 24 B. 36 C. 18 D. 48 E. None of these

Directions (11–15) : Study the following pie chart carefully and answer the questions given beside.

The following graph shows the number of diamonds sold by a jeweller from 2013-18.



11. In 2013, the jeweller earned a profit of $1500 on every diamond. Find the total profit made by the jeweller in that year?

A. $ 300000 B. $ 200000 C. $ 3000000 D. $ 30000 E. $ 20000

12. Find the ratio of profit made in the first three years to the last three years.

A. 5 : 8 B. 3 : 4 C. 4 : 3 D. 8 : 5 E. Can't be determined

13. The diamonds sold in 2014 is what percentage of the total diamonds sold from 2013 to 2018.

A. 11.92% B. 12.23% C. 12.46% D. 12.82% E. 13.12%

14. How many years recorded equal or higher sales than the average sale of 6 years?

A. 1 B. 2 C. 3 D. 4 E. 5

15. On every diamond, the jeweller earned a profit of $1200 in 2014 and $1300 in 2015. Find the ratio of the total profit in 2014 to the total profit in 2015.

A. 13 : 10 B. 10 : 13 C. 12 : 13 D. 13 : 12 E. 30 : 13

Directions (16-25): What approximate value should come in place of question mark(?).

16. v326 × 13.98 ÷ 20.94 = ?

A. 17 B. 22 C. 12 D. 35 E. 7

17. 130.02 + 241 ÷ 6 – 163.11 = $\sqrt[3]{?}$

A. 125 B. 343 C. 49 D. 7 E. 216

18. 33.33% of 60.15 + 60.04% of 160.12 = ?

A. 98 B. 132 C. 108 D. 128 E. 116

19. $16.04^2 - 3.01 \times 95.91 \div 4.02 = ?$

A. 195 B. 203 C. 153 D. 184 E. 133

20. $\left[\left(\frac{1}{5} \times 175\right) \div \left(\frac{1}{7} \times 37\right)\right] + ? = 112$

A. 106 B. 95 C. 86 D. 116 E. 6

21. $132.99 \times 62.01 - (16.98)^2 = ?$

A. 8457 B. 10257 C. 6582 D. 7957 E. 9280

22. $\frac{132.995}{7.01} + \frac{368.001}{22.999} = ?$

A. 27 B. 45 C. 16 D. 35 E. 9

23. $\frac{4}{5}$ of $\frac{3}{7}$ of $\frac{7}{9}$ of $1575 = ?$

A. 520 B. 550 C. 350 D. 420 E. 460

24. 84% of 500 – 16% of 650 = ? – 36% of 349.569

A. 440 B. 490 C. 390 D. 410 E. 520

25. $24.0009 \div \sqrt{35.999} \times (373 + ?) = 2040.05$

A. 197 B. 177 C. 97 D. 157 E. 137

Directions (26 – 35) : Find the missing term in the given series.

26. 10 11 24 75 ? 1525

A. 284 B. 304 C. 324 D. 288 E. 512

27. 264 268 ? 284 300 324

A. 272 B. 274 C. 276 D. 278 E. None of these

28. 4 8 32 ? 1536 15360

A. 192 B. 148 C. 202 D. 224 E. 186

29. 2 3.4 6.2 10.4 ? 23

A. 16 B. 12.5 C. 22 D. 21 E. 12

30. 628 160 44 ? 10 9.5

A. 12 B. 14.5 C. 16 D. 22 E. 18

31. 3 5 13 21 49 ?

A. 99 B. 89 C. 109 D. 117 E. None of these

32. 43 331 475 547 583 ?

A. 591 B. 601 C. 585 D. 598 E. None of these

33. 3 8 16 ? 33 38

A. 22 B. 27 C. 25 D. 29 E. None of these

34. 2 3 6 15 45 ? 630

A. 195.25 B. 157.5 C. 225.5 D. 145.5 E. None of these

35. 6474 1074 210 ? 12 3

A. 33 B. 44 C. 48 D. 66 E. None of these

Directions (36 – 45) : In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer.

36. **I.** $x^2 = 49$
II. $y^2 = 16$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

37. **I.** $x^2 - 13x + 40 = 0$
II. $y^2 - 16y + 63 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

38. **I.** $x^2 + 4x + 3 = 0$
II. $5y^2 + 8y + 3 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

39. **I.** $2x^2 - x - 231 = 0$
II. $2y^2 + 43y + 231 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

40. **I.** $55x^2 - 495x + 1100 = 0$
II. $5y^2 + 10y - 120 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

41. **I.** $2x^2 + 7x + 5 = 0$
II. $3y^2 + 5y + 2 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

42. **I.** $2x^2 - 13x + 21 = 0$
II. $3y^2 - 14y + 15 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

43. **I.** $2x^2 - 13x + 18 = 0$
II. $y^2 - 7y + 12 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

44. **I.** $x^2 + 6x + 9 = 0$
II. $y^2 - y - 20 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

45. **I.** $3x^2 - 10x + 8 = 0$
II. $2y^2 - 19y + 35 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

Directions (46 – 55): What will come in place of question mark(?) in the following questions?

46. **60% of 1450 + ?% of 1850 = 55% of 2520 + 298**

A. 36 B. 34 C. 28 D. 38 E. None of these

47. **108√? + 524 = $\frac{3}{4}$ of 588 + 731**

A. 25 B. 36 C. 16 D. 64 E. None of these

48. **5 $\frac{3}{7}$ of 224 + 430 = 4985 – ? – 1100**

A. 1949 B. 1845 C. 2239 D. 2555 E. None of these

49. **198 × 16 – 11 × 68 + $(29)^2$ = ?**

A. 5560 B. 3261 C. 2840 D. 3020 E. None of these

50. **58% of 1850 – 36% of 1245 = ?**

A. 484.4 B. 550 C. 644.8 D. 524.8 E. 624.8

51. **334.6 + 1062.15 + ? = 2554.15 – 295.23**

A. 762.17 B. 567.27 C. 862.17 D. 472.07 E. 652.27

52. **2.5 × 3.1 + 5.2 × 1.3 + 76.02 = ?**

A. 90.53 B. 84.60 C. 88.65 D. 102.61 E. 108.63

53. **√1225 × 36 – 767 = ?**

A. 348 B. 469 C. 572 D. 567 E. 493

54. $9\frac{1}{2}$ of $5\frac{1}{2} \div 2\frac{1}{5} = ?$

A. 10.25 B. 5.25 C. 8.75 D. 6.75 E. 9.5

55. $\frac{72 \times \frac{5}{24} + 60.75}{23 \times \frac{6}{4} - 9.25} = ?$

A. 3 B. 6 C. 8 D. 10 E. 12

Correct Answers:

1	2	3	4	5	6	7	8
D	C	A	A	B	C	B	A
9	10	11	12	13	14	15	16
D	B	A	E	D	C	B	C
17	18	19	20	21	22	23	24
B	E	D	A	D	D	D	A
25	26	27	28	29	30	31	32
E	B	C	A	A	C	B	B
33	34	35	36	37	38	39	40
C	B	C	E	E	B	C	C
41	42	43	44	45	46	47	48
B	C	E	E	D	E	B	C
49	50	51	52	53	54	55	
B	E	C	A	E	C	A	

Explanations:

1. Applying, $M_1D_1 = M_2D_2$

$(200M + 350W) \times 40 = (50M + 110W) \times 150$

$\Rightarrow 800M + 1400W = 750M + 1650W$

$\Rightarrow 50M = 250W$

$\Rightarrow M = 5W$

Now,

$(200M + 350W) \times 40 = (70M + 100W) \times D$

$\Rightarrow (1000W + 350W) \times 40 = (350W + 100W) \times D$

$\Rightarrow D = \frac{1350 \times 40}{450} = 120$ days

Hence, option D is correct.

2. Ratio of investments = 2 : 3

Ratio of time period of their investments = 3 : 2

Profit will be shared in the ratio $(2 \times 3) : (3 \times 2) = 1 : 1$

Anil's share $= \frac{1}{2} \times 10000 =$ Rs. 5000

Hence, option C is correct.

3. Let, speed of Dutee Chand be x m/s

P.T. Usha gives Dutee Chand a start of 4 m.

According to problem,

$$\frac{100-4}{x}-\frac{100}{5}=4$$

$$\Rightarrow \frac{96}{x}-20=4$$

$$\Rightarrow \frac{96}{x}=24$$

$$\Rightarrow x=\frac{96}{24}$$

$$\Rightarrow x=4$$

∴ Speed of Dutee Chand = 4 m/s

Alternate solution:-

Time taken by P.T. Usha to cover 100m

$$=\frac{100}{5}=20\text{sec}$$

As Dutee Chand took 4 sec more than P.T Usha and was given a start of 4m

So, Time taken by Dutee Chand to cover (100 – 4) m = (20 + 4) sec

So, Dutee Chand covered 96 m in 24 sec.

Speed of Dutee Chand $=\frac{96}{24}=4$ m/s

Hence, option A is correct.

4.

$$SP=\frac{400\times 80}{100}=\text{Rs. } 320$$

$$CP=\frac{300}{320}\times 320=\text{Rs. } 300$$

Hence, option A is correct.

5. Let the quantity of pomegranate bought be x kg and that of pineapple be (60 - x) kg.

∴ According to the question,

⇒ 15x + (60 – x) 10 = 700

⇒ 15x + 600 – 10x = 700

⇒ 5x + 600 = 700

⇒ 5x = 100

∴ x = 20

Hence, option B is correct.

6. Sum of present age of Ashish, Bhuvan and Chanchlani = 98 – 4 × 3 = 98 – 12 = 86 years

Present age of Chanchlani = 86 – (32 + 23) = 31 years

Age of Chanchlani after 4 years = 31 + 4 = 35 years

Hence, option C is correct.

7.

$$\text{Simple interest} = \frac{P \times R \times T}{100} = \frac{293 \times 21 \times 3}{100}$$

= Rs.184.59

Hence, option B is correct.

8. Total time taken to cover 4x km

$$= \left(\frac{x}{20}\right) + \left(\frac{3x}{80}\right) = \frac{7x}{80}$$

$$\text{Speed} = \frac{\text{distance}}{\text{time}}$$

$$= 4x \times \frac{80}{7x}$$

$$= 45\frac{5}{7}\text{km/h}$$

Hence, option A is correct.

9. Part of the tank filled by T_1, T_2 and T_3 in 1 hour = 1/6

Part of the tank filled by T_1, T_2 and T_3 in 2 hours = 1/3

Remaining part to be filled = $\left(1 - \frac{1}{3}\right) = \frac{2}{3}$

Time taken by T_1 and T_2 to fill 2/3rd part = 8 hours

∴ Time taken to fill whole tank by T_1 and T_2

= $\left(8 \div \frac{2}{3}\right)$ = 12 hours

Hence, option D is correct.

10. Let the consecutive even numbers be

2x, (2x + 2), (2x + 4), (2x + 6), (2x + 8), (2x + 10) and (2x + 12)

So, according to question,

1.40 × 2x = 2x + 12

2.8x – 2x = 12

0.8x = 12

⇒ x = 15

So, the numbers are 30, 32, 34, 36, 38, 40 and 42

Average of these numbers

= $\frac{(30 + 42)}{2} = \frac{72}{2}$ = 36

Hence, option B is correct.

11. Number of diamonds sold in 2013 = 200
Profit per diamond = $1500
Total profit = $200 × 1500 = $3,00,000
Hence, option A is correct.

12. It cannot be determined because profit per diamond in each year is not known.

Hence, option E is correct.

13. Number of diamonds sold in 2013 = 200

Number of diamonds sold in 2014 = 250

Number of diamonds sold in 2015 = 300

Number of diamonds sold in 2016 = 350

Number of diamonds sold in 2017 = 400

Number of diamonds sold in 2018 = 450

Total diamonds sold = 1950

Percentage of diamonds sold in 2014

$= \frac{250}{1950} \times 100 = 12.82\%$

Hence, option D is correct.

14. Number of diamonds sold in 2013 = 200

Number of diamonds sold in 2014 = 250

Number of diamonds sold in 2015 = 300

Number of diamonds sold in 2016 = 350

Number of diamonds sold in 2017 = 400

Number of diamonds sold in 2018 = 450

Total diamonds sold = 1950

$\text{Average} = \frac{1950}{6} = 325$

3 years i.e. 2016, 2017 and 2018 recorded higher sales than the average sales.

Hence, option C is correct.

15. Number of diamonds sold in 2014 = 250

Profit per diamond = $1200

Total profit in 2014 = $250 × 1200 = $3,00,000

Number of diamonds sold in 2015 = 300

Profit per diamond = $1300

Total profit in 2015 = $300 × 1300 = $3,90,000

Required ratio = 3,00,000 : 3,90,000 = 10,: 13

Hence, option B is correct.

16. ? = √326 × 13.98 ÷ 20.94

? ≈ √324 × 14 ÷ 21

? = 18 × 14 ÷ 21

? = 252 ÷ 21

? = 12

Hence, option C is correct.

17. $\sqrt[3]{?}$ = 130.02 + 241 ÷ 6 – 163

$\sqrt[3]{?}$ ≈ 130 + 40 – 163

$\sqrt[3]{?}$ = 170 – 163

$\sqrt[3]{?}$ = 7

? ≈ 7 × 7 × 7 = 343

Hence, option E is correct.

18. ? = 33.33% of 60.15 + 60.04% of 160.12

? ≈ 33.33% of 60 + 60% of 160

$? = \frac{1}{3} \times 60 + \frac{3}{5} \times 160$

? = 20 + 96

? = 116

Hence, option E is correct.

19. $? = (16.04)^2 - 3.01 \times 95.91 \div 4.02$

$? \approx (16)^2 - 3 \times 96 \div 4$

? = 256 – 3 × 24

? = 256 – 72

? = 184

Hence, option D is correct.

20.

$\left(\left[\frac{1}{6} \times 175\right] \div \left[\frac{1}{7} \times 37\right]\right) + ? = 112$

? ≈ 112 – (29 ÷ 5)

? ≈ 112 – 5.8

? ≈ 106.2

? ≈ 106

Hence, option A is correct.

21. $132.99 \times 62.01 - (16.98)^2 = ?$

$? \approx 133 \times 62 - (17)^2$

? = 8246 – 289 = 7957

Hence, option D is correct.

22.

$? = \frac{132.995}{7.01} + \frac{368.001}{22.999}$

$? \approx \frac{133}{7} + \frac{368}{23}$

$? = 19 + 16 = 35$

Hence, option D is correct.

23.

$? = \frac{4}{5}$ of $\frac{3}{7}$ of $\frac{7}{9}$ of 1575

$? = \frac{4}{5} \times \frac{3}{7} \times \frac{7}{9} \times 1575$

$? = 12 \times 35 = 420$

Hence, option D is correct.

24. 84% of 500 – 16% of 650 = ? – 36% of 349.569

$84 \times 5 - 16 \times 6.50 \approx ? - 36 \times 3.5$

$420 - 104 \approx ? - 126$

$? \approx 316 + 126 = 442 \approx 440$

Hence, option A is correct.

25. $24.0009 \div \sqrt{35.999} \times (373 + ?) = 2040.05$

$24 \div \sqrt{36} \times (373 + ?) \approx 2040$

$24 \div 6 \times (373 + ?) \approx 2040$

$373 + ? = \approx 510$

$\therefore ? \approx 510 - 373 = 137$

Hence, option E is correct.

26.

Series Pattern	Given Series	
10	10	
10 × 1 + 1	11	
11 × 2 + 2	24	
24 × 3 + 3	75	
75 × 4 + 4	**304**	✓
304 × 5 + 5	1525	

Hence, option (B) is correct.

27. **Series Pattern:**

Series I : 264 268 **274** 284 300 324
Series II : + 4 + 6 + 10 + 16 + 24
Series III : + 2 + 4 + 6 + 8
Series IV : + 2 + 2 + 2

Hence, option (C) is correct.

28.

Series Pattern	Given Series	
4	4	
4 × 2	8	
8 × 4	32	
32 × 6	**192**	✓
192 × 8	1536	
1536 × 10	15360	

Hence, option (A) is correct.

29.

Series Pattern	Given Series	
2	2	
2 + 1.4 = 3.4	3.4	
3.4 + 2.8 = 6.2	6.2	
6.2 + 4.2 = 10.4	10.4	
10.4 + 5.6 = 16	**16**	✓
16 + 7 = 23	23	

Hence, option (A) is correct.

30.

Series Pattern	Given Series	
628	628	
628 ÷ 4 + 3 = 160	160	
160 ÷ 4 + 4 = 44	44	
44 ÷ 4 + 5 = 16	**16**	✓
16 ÷ 4 + 6 = 10	10	
10 ÷ 4 + 7 = 9.5	9.5	

Hence, option (C) is correct.

31.

Series Pattern	Given Series	
3	3	
3 × 2 – 1	5	
5 × 2 + 3	13	
13 × 2 – 5	21	
21 × 2 + 7	49	
49 × 2 – 9	**89**	✓

Hence, option (B) is correct.

32.

Series Pattern	Given Series	
43	43	
43 + 288	331	
331 + 144	475	
475 + 72	547	
547 + 36	583	
583 + 18	**601**	✓

Hence, option (B) is correct.

33.

Series Pattern	Given Series	
3	3	
3 + 5 × 1	8	
8 + 4 × 2	16	
16 + 3 × 3	**25**	✓
25 + 2 × 4	33	
33 + 1 × 5	38	

Hence, option (C) is correct.

34.

Series Pattern	Given Series	
2	2	
2 × 1.5	3	
3 × 2	6	
6 × 2.5	15	
15 × 3	45	
45 × 3.5	**157.5**	✓
157.5 × 4	630	

Hence, option (B) is correct.

35.

Series Pattern	Given Series	
6474	6474	
(6474 – 30) ÷ 6 = 1074	1074	
(1074 – 24) ÷ 5 = 210	210	
(210 – 18) ÷ 4 = 48	**48**	✓
(48 – 12) ÷ 3 = 12	12	
(12 – 6) ÷ 2 = 3	3	

Hence, option (C) is correct.

36. **I.** $x^2 = 49$
$\therefore x = \pm 7$

II. $y^2 = 16$
$\therefore y = \pm 4$

Hence, no relationship can be established.
Hence, option E is correct.

37. **I.** $x^2 - 13x + 40 = 0$
$x^2 - 8x - 5x + 40 = 0$
$x(x - 8) - 5(x - 8) = 0$
$(x - 8)(x - 5) = 0$
$x = 8, 5$

II. $y^2 - 16y + 63 = 0$
$y^2 - 9y - 7y + 63 = 0$
$y(y - 9) - 7(y - 9) = 0$
$(y - 9)(y - 7) = 0$
$y = 9, 7$
Hence, no relationship can be established.

Hence, option E is correct.

38. **I.** $x^2 + 4x + 3 = 0$
$x^2 + 3x + 1x + 3 = 0$
$x(x + 3) + 1(x + 3) = 0$
$(x + 3)(x + 1) = 0$
$x = -3, -1$

II. $5y^2 + 8y + 3 = 0$
$5y^2 + 5y + 3y + 3 = 0$
$5y(y + 1) + 3(y + 1) = 0$
$(5y + 3)(y + 1) = 0$
$y = -0.6, -1,$

Hence, $x \leq y$

Hence, option B is correct.

39. **I.** $2x^2 - x - 231 = 0$
$2x^2 - 22x + 21x - 231 = 0$
$2x(x - 11) + 21(x - 11) = 0$
$(2x + 21)(x - 11) = 0$
$x = -10.5, 11$

II. $2y^2 + 43y + 231 = 0$
$2y^2 + 22y + 21y + 231 = 0$
$2y(y + 11) + 21(y + 11) = 0$
$(2y + 21)(y + 11) = 0$
$y = -10.5, -11,$

Hence, $x \geq y$
Hence, option C is correct.

40. **I.** $55x^2 - 495x + 1100 = 0$
$x^2 - 9x + 20 = 0$
$x^2 - 5x - 4x + 20 = 0$
$x(x - 5) - 4(x - 5) = 0$
$(x - 4)(x - 5) = 0$
$x = 5, 4$

II. $5y^2 + 10y - 120 = 0$
$y^2 + 2y - 24 = 0$
$y^2 + 6y - 4y - 24 = 0$
$y(y + 6) - 4(y + 6) = 0$
$(y + 6)(y - 4) = 0$
$y = -6, 4$

Hence, $x \geq y$

Hence, option C is correct.

41. **I.** $2x^2 + 7x + 5 = 0$

$\Rightarrow 2x^2 + 2x + 5x + 5 = 0$

$\Rightarrow 2x(x + 1) + 5(x + 1) = 0$

$\Rightarrow (2x + 5)(x + 1) = 0$

$x = -2.5, -1$

II. $3y^2 + 5y + 2 = 0$

$\Rightarrow 3y^2 + 3y + 2y + 2 = 0$

$\Rightarrow 3y(y + 1) + 2(y + 1) = 0$

$\Rightarrow (3y + 2)(y + 1) = 0$

$y = -0.66, -1$

For $x = -2.5$ and $y = -0.66, -1$ $x < y$

For $x = -1$ and $y = -0.66, -1$ $x \leq y$

Hence x is either less than or equal to y.

Hence, option B is correct.

42. **I.** $2x^2 - 13x + 21 = 0$

$\Rightarrow 2x^2 - 6x - 7x + 21 = 0$

$\Rightarrow 2x(x - 3) - 7(x - 3) = 0$

$\Rightarrow (2x - 7)(x - 3) = 0$

$x = 3.5, 3$

II. $3y^2 - 14y + 15 = 0$

$\Rightarrow 3y^2 - 9y - 5y + 15 = 0$

$\Rightarrow 3y(y - 3) - 5(y - 3) = 0$

$\Rightarrow (3y - 5)(y - 3) = 0$

$y = 1.66, 3$

Hence, $x \geq y$

Hence, option C is correct.

43. **I.** $2x^2 - 13x + 18 = 0$

$\Rightarrow 2x^2 - 4x - 9x + 18 = 0$
$\Rightarrow 2x(x - 2) - 9(x - 2) = 0$
$\Rightarrow (2x - 9)(x - 2) = 0$
$x = 4.5,\ 2$

II. $y^2 - 7y + 12 = 0$
$\Rightarrow y^2 - 4y - 3y + 12 = 0$
$\Rightarrow y(y - 4) - 3(y - 4) = 0$
$\Rightarrow (y - 3)(y - 4) = 0$

$y = 4, 3$

For $x = 4.5$ and $y = 4, 3$ $\quad x > y$
For $x = 2$ and $y = 4, 3$ $\quad x < y$

Hence, no relationship can be established

Hence, option E is correct.

44. **I.** $x^2 + 6x + 9 = 0$
$\Rightarrow x^2 + 3x + 3x + 9 = 0$
$\Rightarrow x(x + 3) + 3(x + 3) = 0$
$\Rightarrow (x + 3)(x + 3) = 0$
$x = -3, -3$

II. $y^2 - y - 20 = 0$
$\Rightarrow y^2 - 5y + 4y - 20 = 0$
$\Rightarrow y(y - 5) + 4(y - 5) = 0$
$\Rightarrow (y + 4)(y - 5) = 0$
$y = -4,$
For $x = -3$ and $y = -4,$ $\quad x > y$
For $x = -3$ and $y = 5,$ $\quad x < y$
Hence, no relationship can be established
Hence, option E is correct.

45. **I.** $3x^2 - 10x + 8 = 0$

$\Rightarrow 3x^2 - 6x - 4x + 8 = 0$

$\Rightarrow 3x(x - 2) - 4(x - 2) = 0$

$\Rightarrow (3x - 4)(x - 2) = 0$

$x = 4/3, 2$

II. $2y^2 - 19y + 35 = 0$

$\Rightarrow 2y^2 - 14y - 5y + 35 = 0$

$\Rightarrow 2y(y - 7) - 5(y - 7) = 0$

$\Rightarrow (2y - 5)(y - 7) = 0$

$y = 2.5, 7$

Hence, $x < y$

Hence, option D is correct.

46. 60% of 1450 + ? % of 1850 = 55% of 2520 + 298

or, 60% of $1450 + \frac{?}{100}$ of $1850 = 55\%$ of $2520 + 298$

or, $\frac{60}{100} \times 1450 + \frac{?}{100} \times 1850 = \frac{55}{100} \times 2520 + 298$

or, $870 + 18.5 \times ? = 1386 + 298$

or, $18.5 \times ? = 1386 + 298 - 870$

or, $18.5 \times ? = 516 + 298$

$\therefore ? = \frac{814}{18.5} = 44$

Hence, option E is correct.

47.

$108\sqrt{?} + 524 = \frac{3}{4}$ of $588 + 731$

or, $108\sqrt{?} + 524 = 441 + 731$

or, $108\sqrt{?} = 1172 - 524$

or, $108\sqrt{?} = 648$

or, $\sqrt{?} = 6$

$\therefore ? = 6^2 = 36$

Hence, option B is correct.

48.

$5\frac{3}{7}$ of 224 + 430 = 4985 – ? – 1100

$\Rightarrow \frac{38}{7} \times 224 + 430 = 4985 - ? - 1100$

$\Rightarrow 1216 + 430 = 3885 - ?$

$\therefore$? = 3885 – 1646 = 2239

Hence, option C is correct.

49. $198 \times 16 - 11 \times 68 + (29)^2 = ?$

$\Rightarrow ? = 198 \times 16 - 11 \times 68 + (29)^2$

$\Rightarrow ? = 3168 - 748 + 841$

$\Rightarrow ? = 4009 - 748 = 3261$

Hence, option B is correct.

50. 58% of 1850 – 36% of 1245 = ?

? = 58% of 1850 – 36% of 1245

? = 1073 – 448.2 = 624.8

Hence, option E is correct.

51. 334.6 + 1062.15 + ? = 2554.15 – 295.23

or, 1396.75 + ? = 2258.92

? = 2258.92 – 1396.75

? = 862.17

Hence, option C is correct.

52. ? = 2.5 × 3.1 + 5.2 × 1.3 + 76.02

? = 7.75 + 6.76 + 76.02

? = 90.53

Hence, option A is correct.

53. √1225 × 36 – 767 = ?

? = 35 × 36 – 767

? = 1260 – 767

? = 493

Hence, option E is correct.

54.

$? = 3\frac{1}{2} \text{ of } 5\frac{1}{2} \div 2\frac{1}{5}$

$? = \frac{7}{2} \times \frac{11}{2} \times \frac{5}{11} = 8.75$

Hence, option C is correct.

55.

$$\frac{72 \times \frac{5}{24} + 60.75}{23 \times \frac{6}{4} - 9.25} = ?$$

$? = \frac{75.75}{25.25} = 3$

Hence, option A is correct.