BOOST UP PDFS | Quantitative Aptitude | Simplification (Moderate Level Part-1)

Recommend for SBI PO, SBI Clerk, IBPS RRB/PO/Clerk Exams

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Direction (1-10): What should come in place of the question mark (?) in the following questions?

1. 62.5% of 800 – 33.33% of 960 = 125% of ?

a. 120

b. 144

c. 165

d. 180

e. None of these

2. $(2)^5 \times (3^2)^3 \div (64)^3 = (40 \div 10)^{? + 1}$

a. 3

b. 4

c. 5

d. 6

e. None of these

3. $\sqrt{301 - \sqrt{168 - \sqrt{544 + \sqrt{1042 - \sqrt{324}}}}} = ? \div 3$

a.25

b.51

c.39

d.34

e. 65

4. $48.3 \times 289 \div 3.4 \div 23 \div 68 \times 21 = ?^3 + 28.125$

a.5

b.3

c.8

d.11

e.None of these

5. $(21^2 - 3^9) \times (3^6 - 9^3) + 11^2 = ?$

a.12251

b.17781

c.91641

d.72361

e.None of these

6. If X = 10, Y = 7, then

$$\frac{(X - Y)^4 - 18}{7} \times \frac{9XY}{10Y^2 - 6XY} = ?$$

a.44

b.113

c.66

d.81

e. 69

7. $143^2 + 188^2 + 201^2 - 142^2 - 186^2 - 199^2 = ?$

a. 1833

b. 1783

c. 1567

d. 1098

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8. $(6\sqrt{6} \times 2\sqrt{3} \times 4\sqrt{2}) \div 12 = ? + 123 - 59$

a.-75

b.-40

c. -80

d.60

e.None of these

9. 88555/89 + 4925/985 - 3√6859 + √441 =?

a. 1000

b. 1001

c. 1002

d.1003

e.None of these

10. 36 % of 63621 + 63 * 89 – 532 * 95 + 4275/95 =?

a. 21984.44

b. 21884.44

c. – 21984.44

d.– 21884.44

e.None of these

Direction (11-20): What should come in place of the question mark (?) in the following questions?

11.3√2197 * 594 - √256 * 449 + 0.8 % of 590 =?

a.532.72

b.552.72

c.524.72

d.542.72

e.None of these

12. √11025/15 * 1968 + 12632 – 1262 * 23 =?

a.- 2610

b.2610

c.-2618

d.- 2608

e.None of these

13. 526 * 24 + 224 * 28 – 198 *23 – 608 =?

a.13734

b.13735

c.13634

d.13374

e.None of these

14. (562 - 252) * 1/31 +? % of 100 = 150 + (562 * 1.62)

a.989.44

b.969.44

c.959.44

d.919.44

e.None of these

15. (3380 * 46/52) + 384 – (1832 * 3/4) =? + 3√12167 * √4761

a.413

b.423

c. 453

d.433

e.None of these

16. 1625 * 222 * 3.8 - 622256 =? + 98 % of 56558

a.696267.16

b.695267.16

c.693167.16

d.698767.16

e.None of these

17. $9^6/27 * 2187/27^4 * 3^? = 9/729 * 243/6561$

a. 10

b.- 10

c.9

d.- 12

e.None of these

18. $\sqrt{6084} + \sqrt{2401} \times 8 - 144 + 658 = ?$

a.984

b.894

c.948

d.489

e.none of these

19. Find the value of 1/(3 + 1/(3 + 1/(3 – 1/3)))

a.3/10

b.10/3

c.27/89

d.89/27

e. None of these

20. $\sqrt{10 + \sqrt{27 + \sqrt{65 + \sqrt{256}}}}$

a.9

b. 8

c.6

d.4

e. None of these

Direction (21-25): What should come in place of the question mark (?) in the following questions?

21. $\sqrt{7396} \times 3375 = 225 \times ?$

a. 1,250

b. 1,290

c. 1,270

d. 1,300

e. 1,232

22. 89 % of 624 + 1220 - √10404 – 1020 =?

a.653.36

b.663.36

c.643.36

d.673.36

e.None of these

23. (3.5 x 3.5 x 3.5 - 1.5 x 1.5 x 1.5)/ (3.5 x 3.5 + 1.5 x 1.5 + 3 x 3.5/2) = ?

a.0

b.1

c.3

d.2

e.None of these

24. 25/3 x 22/5 + ? = 222/5

a.116/13

b.116/15

c.117/15

d.116/13

e.None of these

25. 1/7 + [7/9 - (3/2 + 2/9) - 2/9] = ?

a. - 43/42.

b. 44/42.

c.- 43/43.

d.44/43.

e.None of these

Direction (26-50): What approximate value should come in place of question mark (?) in the following questions?

26. (251.87 × 8 × 6.99) ÷ 25 = 11.986 + ?

a. 448

b. 586

c. 568

d. 548

e. 652

27. $1\frac{1}{16.99}$ of 50.988 + ?% of 5500 = 41.992^2 + 49.99

a. 64

b. 82

c. 32

d. 52

e. 62

28. √7378 x √1330 ÷ √660 = ?

a.250

b.320

c.120

d.420

e.150

29. 6999 ÷ 70.005 x 94.998 = ? x 19.999

a.575

b.675

c.475

d.375

e.275

30. 125% of 4875 + 88.005 x 14.995 =?

a.7515

b.7415

c.7210

d.7145

e.7005

31. $\sqrt{1000} + \frac{3.001}{4.987}$ **of 1891.992**

a.1166

b.1530

c.980

d.685

e.1130

32. $(?)^2 + (6.99)^3 = (19.99)^2 + (7.98)^2$

a.11

b.14

c.13

d.10

e. None of these

33. 84.789% of 479.983 – 26.01% of 349.98 – 3024.31 ÷ 35.998 = ?

a.255

b.285

c.295

d.235

e.205

34. (5 * 7)% of (34 * 55) + 456.60 = 699.10 + ?

a.510

b.610

c.410

d.310

e.210

35. 103.1% of 6401.01 – 3/7 % of6300.12 + 11.999 =?

a.6597

b.6527

c.6777

d.5677

e.6577

36. 29.8% of 260 + 60.01% of 510 - 103.57 = ?

a. 480

b.380

c.280

d.180

e.580

37. √120 x √530 + √1681 + √5330 = ?

a.327

b.227

c.367

d.267

e.427

38. 11.12 % of 261 – 32.01 + 50.01 % of 3200 = ? / 2.99

a.4761

b.4701

c.4791

d.4747

e.4737

39. $17.99^2 - 14.05^2 + (2343.75 + 81.55) \div ? = 229$

a.32

b.39

c.24

d.28

e.12

40. 36% of 545 + 32% of 215 – 47% of 1300 = ?

a. 643

b. 346

c. –411

d. –346

e. –643

41. √6560*4.007+119.99*1.998-50.001% of 479.908=?

a. 348

b. 324

c. 368

d. 372

e. 396

42. 19.99% of 789.907 * 15.08 + 111.999 ÷ 4.034 - 45% of 399.998 =?

a. 2220

b. 2290

c. 2190

d. 1320

e. 2480

43. 699.989÷7.05-4.998*17.96+14.05*3.99-12.09=?

a. 54

b. 60

c. 48

d. 42

e. 64

44.

$[(5\sqrt{7}+\sqrt{7})\times(4\sqrt{7}+8\sqrt{7})]-(19)^2=?$

a. 143

b. 134

c. 123

d. 134

e. 101

45. 5 (2/3) of 299.78 + 3 (1/8) of 429.67 =? % of 749.85

a. 384

b. 360

c. 448

d. 412

e. 490

46. 26 % of 349.75 – 32 % of 599.27 =? – 157.94 – $(27.21)^2$

a. 820

b. 568

c. 786

d. 634

e. 912

47. $(17.78)^2$ + 23 % of 1299 – (5/12) of 839 =? – $(9.72)^3$

a. 850

b. 1700

c. 1275

d. 2135

e. 2450

48. 34.99*3.04+80.03% of 40.06-12.977*1.907+? = 45.06*3.009

a. 20

b. 28

c. 18

d. 24

e. 30

49. 22 1/3% of 435.3-(11/7)% of 1734.67 =?

a. 78

b. 69

c. 50

d. 59

e. 62

50. 13.689×17.213+21.864×8.79=?

a. 400

b. 380

c. 440

d. 460

e. None of these

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Answer with Solution

Solution (1-10)

1. B

62.5% of $800 - 33.33\%$ of $960 = 125\%$ of x

125% of $x = \frac{800}{8} \times 5 - \frac{960}{3}$

125% of $x = 500 - 320$

$x = 180 \times \frac{100}{125}$

$x = 144$

2. A

$(2)^5 \times (32)^3 \div (64)^2 = (40 \div 10)^{?+1}$

$(2)^5 \times (2)^{15} \div (2)^{12} = (4)^{?+1}$

$(2)^8 = (2)^{2x+2}$

Base is same

$8 = 2x+2$

$x = 3$

3. B

$\sqrt{301 - \sqrt{168 - \sqrt{544 + \sqrt{1042 - \sqrt{324}}}}} = ? \div 3$

$\sqrt{301 - \sqrt{168 - \sqrt{544 + \sqrt{1042 - 18}}}} = ? \div 3$

$\sqrt{301 - \sqrt{168 - \sqrt{544 + \sqrt{1024}}}} = ? \div 3$

$\sqrt{301 - \sqrt{168 - \sqrt{544 + 32}}} = ? \div 3$

$\sqrt{301 - \sqrt{168 - \sqrt{544 + 32}}} = ? \div 3$

$\sqrt{301 - \sqrt{168 - \sqrt{576}}} = ? \div 3$

$\sqrt{301 - \sqrt{168 - 24}} = ? \div 3$

$\sqrt{301 - \sqrt{144}} = ? \div 3$

$\sqrt{301 - 12} = ? \div 3$

$\sqrt{289} = ? \div 3$

or, $17 = ? \div 3$ or, $? = 51$

4. B

$48.3 \times 289 \div 3.4 \div 23 \div 68 \times 21 = ?^3 + 28.125$

$483 \times 289 \div 34 \div 23 \div 68 \times 21 = ?+ + 28.125$

$441/8 = ?^3 + 28.125$

$55.125 - 28.125 = ?^3$

$?^3 = 27$

$? = 3$

5. E

$? = (21^2 - 3^9) \times (729 - 729) + 121$

$? = 121 + 0 = 121$

6. D

$$\Rightarrow \frac{(X-Y)^4 - 18}{7} \times \frac{9XY}{10Y^2 - 6XY} = ?$$

$$\Rightarrow \frac{81 - 18}{7} \times \frac{9 \times 10}{10 \times 7 - 6 \times 10}$$

$$\Rightarrow \frac{63}{7} \times \frac{9 \times 10}{10 \times 7 - 6 \times 10}$$

$$\Rightarrow 9 \times \frac{90}{10}$$

$\Rightarrow 81$

7. A

$143^2 + 188^2 + 201^2 - 142^2 - 186^2 - 199^2$

$= (143^2 - 142^2) + (188^2 - 186^2) + (201^2 - 199^2)$

Using $a^2 - b^2 = (a+b)(a-b)$, we have:

$(143 + 142)(143 - 142) + (188 + 186)(188 - 186) + (201$

+ 199)(201 – 199)

= 285 x 1 + 374 x 2 + 400 x 2

= 1833

8. B

$$\frac{6\sqrt{6} \times 2\sqrt{3} \times 4\sqrt{2}}{12} = ? + 123 - 59$$

$$? + 64 = \frac{6\sqrt{6} \times 2\sqrt{3} \times 4\sqrt{2}}{12}$$

$$? + 64 = \frac{6 \times 6 \times 2 \times 4}{12}$$

$$? + 64 = 24$$

$$? = 24 - 64$$

$$? = -40$$

9. C

88555/89 + 4925/985 - 3√6859 + √441 =?

? = 995 + 5 – 19 + 21

? = 1002

10. C

36 % of 63621 + 63 * 89 – 532 * 95 + 4275/95 =?

? = 22903.56 + 5607 – 50540 + 45

? = - 21984.44

Solution (11-20)

11. D

3√2197 * 594 - √256 * 449 + 0.8 % of 590 =?

? = 13 * 594 – 16 * 449 + 4.72

? = 7722 – 7184 + 4.72

? = 542.72

12. C

√11025/15 * 1968 + 12632 – 1262 * 23 =?

? = 105/15 * 1968 + 12632 – 1262 * 23

? = 13776 + 12632 – 29026

? = - 2618

13. A

526 * 24 + 224 * 28 – 198 *23 – 608 =?

? = 12624 + 6272 – 4554 -608

? = 13734

14. E

$(56^2 - 25^2)$ * 1/31 +? % of 100 = 150 + (562 * 1.62)

(56 - 25) (56 + 25) * 1/31 + (? /100) * 100 = 150 + 910.44

81 + (?) = 1060.44

? = 1060.44 - 81

? = 979.44

15. A

(3380 * 46/52) + 384 – (1832 * 3/4) =? + 3√12167 * √4761

? + 23 * 69 = 65 * 46 + 384 – 458 * 3

? = 2990 + 384 – 1374 – 1587

? = 3374 - 2961

? = 413

16. C

1625 * 222 * 3.8 - 622256 =? + 98 % of 56558

? = 360750 * 3.8 – 622256 – 55426.84

? = 748594 – 55426.84

? = 693167.16

17. E

$9^6/27 * 2187/27^4 * 3^? = 9/729 * 243/6561$

81 * 3? = 1/2187

34 * 3? = 1/37

4 +? = -7

? = -7 – 4

? = - 11

18. A

√6084 + √2401 x 8 – 144 + 658 = ?

=> 78 + 49 x 8 – 144 + 658 = ?

=> 78 + 392 – 144 + 658 = ?

=> 1128 – 144 = ?

=> 984 = ?

19. C

1/[3 + (1/(3 + 1/(3 - 1/3)))]

= 1/[3 + 1/(3 + 1/(8/3))]

= 1/[3 + 1/(3 + 3/8)]

= 1/[3 + 1/(27/8)]

= 1/[3 + 8/27]

= 1/(89/27)

= 27/89

20. D

$$\sqrt{10+\sqrt{27+\sqrt{65+\sqrt{256}}}}$$

$$\sqrt{10+\sqrt{27+\sqrt{65+16}}}$$

$$\sqrt{10+\sqrt{27+\sqrt{81}}}$$

$$\sqrt{10+\sqrt{27+9}}$$

$$\sqrt{10+\sqrt{36}}$$

$\sqrt{10+6} = \sqrt{16} = 4$

Solution (21-25)

21. B

$$? = \frac{86 \times 3375}{225}$$

$= 1290$

22. A

89 % of 624 + 1220 - √10404 – 1020 =?

? = 555.36 + 1220 – 102 – 1020

? = 653.36

23. D

(3.5 x 3.5 x 3.5 - 1.5 x 1.5 x 1.5)/(3.5 x 3.5 + 1.5 x 1.5 + 3 x 3.5/2) = ?

=> ? = $[(3.5)^3 - (1.5)^3]$ / $[(3.5)^2 + (1.5)^2 + 5.25]$

=> ? = (3.5 - 1.5){$(3.5)^2 + (1.5)^2 + 5.25$}/$[(3.5)^2 + (1.5)^2 + 5.25]$

= 2.0

24. B

25/3 x 22/5 + ? = 222/5

=> 550/15 + ? = 222/5

=> ? = (222/5) – (550/15)

= (666 - 550)/15

? = 116/15

25. A

1/7 + [7/9 - (3/2 + 2/9) - 2/9] = ?

=> ? = 1/7 + [7/9 - (3/2 + 2/9) - 2/9]

=> ? = 1/7 + [7/9 - 31/18 - 2/9]

=> ? = 1/7 + (14 - 31 - 4)/18

=> ? = 1/7 - 21/18

=> ? = 1/7 - 7/6

=> ? = (6 - 49)/42

? = - 43/42.

Solution (21-50)

26. D

11.986 + ? = (251.87 × 8 × 6.99) ÷ 25

⇒ 12 + ? ≈ (252 × 8 × 7) ÷ 25

⇒ 12 + ? = (10.08 × 8 × 7)

⇒ 12 + ? ≈ 560

? = 560 – 12 = 548

27. C

$1\frac{1}{16.99}$ of 50.988 + ?% of 5500 = 41.992^2 + 49.99

$1\frac{1}{17}$ of 51 + ?% of 5500 ≈ 42^2 + 50

$18 \times \frac{51}{17}$ + ?% of 5500 ≈ 1764 + 50

54 + ?% of 5500 = 1814

?% of 5500 = 1814 – 54 = 1760

$? = 100 \times \frac{1760}{5500} = 32$

28. C

√7378 ≈ 86; √1330 ≈ 36; √660 ≈ 26

√7378 x √1330 ÷ √660 = ?

=> 86 x 36 ÷ 26 = 120

29. C

7000 ÷ 70 x 95 = ? x 20

≈ 475

30. B

125% of 4875 + 88.005 x 14.995 = ?

Taking approximate value of each term,

=>? = 125/100 x 4875 + 88 x 15

=> ? = 6093.75 + 1320

=> ? ≈ 6094 + 1320 = 7414 ≈ 7415

31. A

$\sqrt{1000} + \frac{3.001}{4.987}$ of 1891.992 = ?

$=> ? \approx 31 + \frac{3}{5} \times 1892 = 31 + 1135.2$

=> ? = 1166

32. A

$(?)^2 + (6.99)^3 = (19.99)^2 + (7.98)^2$

$(?)^2 = (19.99)^2 + (7.98)^2 - (6.99)^3$

$(?)^2 \approx 400 + 64 - 343$

$(?)^2 \approx 121$

? ≈ 11

33. D

? = 84.789% of 479.983 – 26.01% of 349.98 – 3024.31 ÷ 35.998

? ≈ 85% of 480 – 26% of 350 – 3024 ÷ 36

? = 408 – 91 – 84

? = 233 ≈ 235

34. C

(5 * 7)% of (34 * 55) + 456.60 = 699.10 + ?

=> [(34*55*5*7)/100] + 456.60 = 699.10 + ?

=> 1111.1 = 699.1 + ?

=> ? = 1111.1 – 699.1

? = 412 ≈ 410

35. E

$$? \approx \frac{6400 \times 103}{100} - 6300 \times \frac{3}{700} + 12$$

≈ 6592 – 27 + 12 = 6557

36. C

29.8% of 260 + 60.01% of 510 - 103.57 = ?

30% of 260 + 60% of 510 – 104 ≈ ?

=> 30/100 × 260 + 60/100 × 510 – 104 = ?

=> 78 + 306 – 104 = ?

=> ? = 384 – 104 = 280.

37. C

√120 x √530 + √1680 + √5330 = ?

=> √120 ≈ √121 = 11

=> √530 ≈ √529 = 23

=> √1680 ≈ √1681 = 41

=> √5330 ≈ √5329 = 73

Then,

11 x 23 + 41 + 73 = 253 + 41 + 73 = 367

38. C

11.12 % of 261 – 32.01 + 50.01 % of 3200 = ? / 2.99

11.12 % of 261 = 1/9 * 261 = 29

50.01% of 3200 = 1600

29 – 32 + 1600 = ?/3

? = 1597* 3 = 4791

39. C

$17.99^2 - 14.05^2 + (2343.75 + 81.55) \div ? = 229$

$\approx 18^2 - 14^2 + (2344 + 82) \div ? = 229$

= 324 – 196 + 2426/? = 229

= 128 + 2426/? = 229

= 2426/? = 101

=> ? = 2426/101 = 24(approx)

40. D

$$? = \frac{36}{100} \times 545 + \frac{32}{100} \times 215 - \frac{47}{100} \times 1300$$
$$= 196.2 + 68.8 - 611$$
$$= -346$$

41. B

√6560*4.007+119.99*1.998-50.001% of 479.908=?

81*4+120*2-240=?

324=?

42. A

?*5+444.99*5.99+899.906+9.999=4579.99

?*5+445*6+900+10=4580

?*5=1000

?=200

43. A

699.989÷7.05-4.998*17.96+14.05*3.99-12.09=?

700 ÷ 7 – 5*18+14*4-12 =?

100-90+56-12=?

54=?

44. A

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$?=6\sqrt{7} \times 12\sqrt{7} - 361$
$= 504 - 361$
$= 143$

45. D

6 of 300 + 3 of 430 = x% of 750

(300*6) + (3*430) = (x/100)*750

1800 + 1290 = 15x/2

(3090*2)/15 = x

X = 412.

46. C

26 % of 350 – 32 % of 600 = x – 158 – 272

(26/100)*350 – (32/100)*600 = x – 158 – 729

91 – 192 + 158 + 729 = x

X = 786

47. C

$(18)^2$ + 23 % of 1300 – (5/12) of 840 = x – $(10)^3$

324 + (23/100)*1300 – (5/12)*840 = x – 1000

324 + 299 – 350 + 1000 = x

X = 1273 = 1275

48. D

34.99*3.04+80.03% of 40.06-12.977*1.907+?

=45.06*3.009

35*3 + 80/100 * 40 – 13 *2 +? = 45*3

105 + 32 – 26 +? = 135

?=24

49. B

? = (67/3) × (435/100) –(11/7) ×(1735/100)≈ (97-27)

=70≈69

50. C

?=14×17+22×9=238+198=436 = 440