Decimals and Fractions Questions For Railway Exams

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Decimals and Fractions Questions for Railway NTPC Stage I Exams

1) Find the largest fraction among the following.

1/2, 3/4, 5/6, 6/11, 2/3, 8/9, 6/7

a) 1/2

b) 8/9

c) 3/4

d) 6/7

2) After arranging the following ratios in descending order, which will be the last number?

a) 16:21

b) 5:7

c) 2:3

d) 13:14

3) Which of the following fractions is the smallest?

a) 93/15

b) 83/26

c) 105/112

d) 41/17

4) Arrange the following fractions in descending order.

11/12, 5/6,3/7,8/9,3/14

a) 11/12, 8/9,5/6,3/7,3/14

b) 11/12, 8/9,3/14,3/7,5/6

c) 11/12, 5/6,8/9,3/7,3/14

d) 11/12, 3/7,8/9,5/6,3/14

5) Which of the following is true for the given numbers?

a) 9/29 <13/33 < 32/47 < 20/47

b) 9/29 <13/33 < 20/47 < 32/27

c) 9/29 <13/33 < 20/47 < 32/47

d) 9/29 <20/47 < 13/33 < 2/47

6) Find the value of √2 up to eight digits decimal.

a) 1.41421356

b) 1.41456421

c) 1.41446521

d) 1.41478976

7) Which of the following is a terminating decimal?

a) 1/64

b) 1/24

c) 1/96

d) 1/48

8) Which of the following fractions has terminating decimal?

a) 10/33

b) 13/66

c) 10/56

d) 42/56

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9) **Which of the following fractions when written as a decimal will not be found in a terminating decimal?**

a) 15/40

b) 8/512

c) 81/450

d) 240/450

10) **Simplify:** $0.\overline{623}$

a) 623/999

b) 623/990

c) 617/990

d) 6 23/990

11) **What is the correct expression of** $0.0\overline{657}$**?**

a) 651/9900

b) 25/297

c) 859

d) 651/1000

12) **Which of these fractions will not result in Recurring decimal?**

a) 1/3

b) 2/5

c) 7/15

d) 8/30

13) **How can** 77/9 **be written in the decimal system?**

a) 8.5

b) $8.\overline{5}$

c) 8.6

d) 8.75

14) **Express 444/5% + 44/5% + 4/5% + 0.4/5% as a decimal number.**

a) 0.8888

b) 0.9988

c) 0.8966

d) 0.9848

15) **Which of the following fractions cannot be further simplified?**

13/169, 27/243, 18/32, 33/43

a) 33/43

b) 18/32

c) 27/243

d) 13/169

16) **How many parts of a day is** 3 **minutes** 36 **seconds?**

a) 1/200

b) 1/300

c) 1/400

d) 1/500

17) **Simplify:**

8/56 ÷ 28/35 ÷ 40/224

a) 6

b) 5

c) 3

d) 1

18) **What is the sum of 5/12 and its inverse?**

a) 12/57

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b) 18/93

c) 120/37

d) 169/60

19) The sum of a fraction and its inverse is $2\frac{1}{6}$. The larger of the two numbers is-

a) $1\frac{3}{4}$

b) $2\frac{5}{6}$

c) $1\frac{9}{11}$

d) $1\frac{1}{2}$

20) The difference between a fraction and its inverse is 3/4, so what will be the difference between the cubes of both the fraction and its inverse?

a) 123/819

b) 173/68

c) 171/64

d) 189/96

21) Find the fraction which, subtracted from 1/4, gives the remaining 7/8?

a) 1/8

b) –5/8

c) 7/8

d) –3/8

22) The sum of two fractions is 11/12. If one of these fractions is 5/6, what will be the other fraction?

a) 1/7

b) 1/9

c) 3/23

d) 1/12

23) Find the value of 12/60 + 13/14 – 19/21 + 31/35 – 23/30?

a) 7/15

b) 3/4

c) 6/13

d) 12/35

24) Adding a fraction to 5/8 makes 9. Find that fraction?

a) 2/3

b) 5/8

c) 8 3/8

d) 9/2

25) In which of the following fractions, adding 1/4 will give 1?

a) 11/32

b) 13/2

c) 22/32

d) 6/8

26) If 39 × 89 = 3471, then0.3471 ÷ 89 =?

a) 0.039

b) 0.39

c) 0.0039

d) 3.9

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27) **Which of the four fractions below is greater than** 8/13 **but smaller than** 12/17**?**

a) 1/2

b) 2/3

c) 7/8

d) 3/8

28) **Which of the following is true?**

a) 10/17 ≤ 14/25

b) 10/17>14/25

c) 10/17 = 14/25

d) 10/17<14/25

29) **1.004 + 1.40004 + 1.3450 – 1.547 =?**

a) 2.20204

b) 3.20204

c) 2.20404

d) 2.40204

30) **Find the smallest of the following decimals.**

a) 0.1 × 0.1 × 0.1 × 0.1

b) 0.1 × 0.03/3

c) 0.1 × 0.01/2

d) 0.1 × 0.1 × 0.02 × 0.2

31) **Which of the following is true?**

a) 30/7 = 54/13

b) 30/7 = 44/13

c) 30/7>44/13

d) 30/7<44/13

32) **If** 3 **is added to both the numerator and denominator of a fraction, its value becomes**11/12. **If** 4 **is subtracted from both the numerator and denominator, its value becomes** 4/5. **What is the value of that fraction?**

a) 8/9

b) 6/13

c) 3/4

d) 3/5

33) **The difference between 4/9 and another number smaller than that is 1/5. What is another number?**

a) 4/41

b) 3/4

c) 11/45

d) 9/16

34) 7/12 **of a fraction is equal to** 3/4. **Find that fraction?**

a) $3\frac{1}{7}$

b) $1\frac{7}{5}$

c) $1\frac{2}{7}$

d) $1\frac{5}{16}$

35) **Simplify: 1/(5-2√3)**.

a) (5 – 2√3)/16

b) (5+2√3)/13

c) (5 – 2√3)/14

d) (5+2√3)/12

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36) **If a rod of 417 3/5 cm length is cut into pieces equal to 23 1/5 cm length, then the total number of pieces obtained will be:**

a) 10

b) 14

c) 16

d) 18

37) **Roshan, Tanya and Yashi shared a cake among themselves. Roshan had 1/4 of it, Yashi had 2/3 of it and the rest was with Tanya. How much of the cake did Tanya have?**

a) 4/7

b) 1/12

c) 1/6

d) 2/6

38) **The sum of the numerator and denominator of a fraction is 13. By adding 3 and 9 respectively to the numerator and denominator, the value of the fraction becomes 2/3. What will be the ratio of the numerator and denominator of the original fraction?**

a) 3:4

b) 5:8

c) 12:13

d) 7:6

39) **Total matches played by a tennis player were 54, in which 36 have been won. Find the number of winning matches as part of total matches in decimal.**

a) 0.667

b) 0.87

c) 0.54

d) 0.333

40) **If 120/150 is equivalent to 4/x, then what is the value of x?**

a) 18

b) 6

c) 19

d) 5

41) **Which of the following ascending order is correct for the given numbers?**

a) 2/3,0.3,1/4

b) 0.3,2/3,1/4

c) 1/4,0.3,2/3

d) 2/3, 1/4,0.3

42) **Which of the following options is an example of a recurring decimal?**

a) 48/60

b) 48/90

c) 48/120

d) 48/30

43) **Find the value of $0.\overline{6}$ in fraction:**

a) 1/3

b) 2/3

c) 5/3

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d) 4/3

44) Which of the following fractions, when written as a decimal, will be recurring decimal?

a) 162/300

b) 8/15

c) 30/96

d) 21/600

45) Change 207÷27in mixed fraction.

a) 7 13/54

b) 7 8/9

c) 7 2/3

d) 7 1/3

46) What will be the sum of 11/5 and its inverse?

a) 146/55

b) 16/16

c) 16/55

d) 110/55

47) If *a* + 5/3 = 7/4, then find the value of a.

a) 1/7

b) 2/13

c) 1/12

d) 1/11

48) What will be the difference between 75/36 and 30/16?

a) 11/24

b) 7/16

c) 10/41

d) 5/24

49) x and y, (corrected to 2 decimal places), are written as 4.57 and 5.42, respectively. What is the upper limit of the value of x + y?

a) 10.000

b) 9.010

c) 8.990

d) 8.995

50) Saina Nehwal has won 54of 81 matches. Find the number of matches lost as part of total matches in decimal.

a) 0.333

b) 0.066

c) 0.55

d)0.667

ANSWERS

1) Answer: B

1/2 = 0.5

3/4 = 0.75

5/6 = 0.83

6/11 = 0.54

2/3 = 0.67

8/9 = 0.89

6/7 = 0.85

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Largest Fraction=0.89 = 8/9

2) Answer: C

The given proportional numbers are-

13/14=39/42

16/21=32/42

5/7=30/42

2/3 = 28/42

Decreasing order of numbers-

13/14>16/21>5/7>2/3

Hence the last proportional number will be 2:3

3) Answer: C

93/15 = 6.2

83/26 = 3.19

105/112 = 0.937

41/17 = 2.411

Hence option C is true.

4) Answer: A

11/12 = 0.92, 5/6 = 0.83,3/7 = 0.42,8/9 = 0.88,3/14 = 0.21

Descending order of fractions - 11/12, 8/9,5/6,3/7,3/14

5) Answer: C

9/29 = 0.31

13/33 = 0.39,

20/47 = 0.42

32/47 = 0.68,

0.31<0.39 < 0.42 < 0.68

So, 9/29 <13/33 < 20/42 < 32/47

6) Answer: A

By taking the square root of 2 by the divide method, the number up to eight digits is 1.41421356.

Thus, option A is correct.

7) Answer: A

1/64 = 0.015625

1/24 = 0.416666667

1/96 = 0.0104166667

1/48 = 0.0208333333

If the numbers in the quotient obtained by dividing a number do not repeat over and over, we call it a terminating decimal.

1/64 = 0.015625 is a terminating decimal.

8) Answer: D

a) 10/33 = 0.3030303

b) 13/66 = 0.19696969

c) 10/56 = 0.17857142857

d) 42/56 = 0.75

Hence the value of fraction 42/56will not come in recurring decimal.

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9) Answer: D

a) 15/40 = 0.375

b) 8/512 = 0.015625

c) 81/450 = 0.18

d) 240/450 = 0.5333…= $0.5\bar{3}$

The value of the fraction given in option (d) is in recurring decimal. And the remaining three options are examples of terminating decimal.

10) Answer: C

=0. $6\overline{23}$

= (623 – 6)/990

= 617/990

11) Answer: A

$0.06\overline{57}$= (657–6)/9900 = 651/9900

12) Answer: B

From options,

a) $\frac{1}{3} = 0.\bar{3}$

b) $\frac{2}{5} = 0.4$

c) $\frac{7}{15} = 0.4\bar{6}$

d) $\frac{8}{30} = \frac{4}{15} = 0.2\bar{6}$

Hence option b is not in recurring decimal.

13) Answer: B

77/9 = $8.\bar{5}$

14) Answer: D

444/5% + 44/5% + 4/5% + 0.4/5%

= 492/5% + 0.4/5%

= 492.4/5%

= 492.4/500 = 0.9848

15) Answer: A

33/43 cannot be simplified further because 43 is prime.

16) Answer: C

Number of hours in 1 day= 24

Number of seconds in 1 day = 24 × 60 × 60 second

3minute36second = (3 × 60 + 36) seconds

= 180 + 36 = 216

Required answer =216/(24× 60 × 60) = 1/400

17) Answer: D

= 8/56 ÷ 28/35 ÷ 40/224

= 8/56 × 35/28 × 224/40

= 1

18) Answer: D

Sum of 5/12 and its inverse =5/12 + 12/5

= (25 + 144)/60 = 169/60

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19) Answer: D

Let the fraction and its inverse be x and 1/*x* respectively.

According to Question-

x + 1/x = 13/6

From option (d)

Putting in the above equation-

3/2+2/3=13/6

⇒(9+4)/6=13/6

⇒13/6=13/6

Greater Fraction= $1\frac{1}{2}$

20) Answer: C

Let the fraction be x/1. Then its inverse will be 1/x.

According to Question,

x/1 – 1/x = 3/4

⇒x – 1/x = 3/4

$[a^3 - b^3 = (a-b)^3 + 3ab(a-b)]$-Formula

= > $x^3 - 1/x^3$

= $(3/4)^3$ + 3*3/4*4/3(3/4)

= 27/64 + 9/4

= (27 + 144)/64 = 171/64

21) Answer: B

Let the fraction be 1/x.

According to Question,

1/4 – 1/*x* = 7/8

=>1/*x* = 1/4 – 7/8 = 2/8 – 7/8

=> 1/*x* = – 5/8

22) Answer: D

Second fraction= 11/12 – 5/6

= 11/12 – 10/12 = 1/12

23) Answer: D

12/60 + 13/14 – 19/21 + 31/35 – 23/30

1/5 + 13/14 – 19/21 + 31/35 – 23/30

= (42 + 195 – 190 + 186 – 161)/210

⇒(423 – 351)/210

⇒72/210 = 12/35

24) Answer: C

Let, that fraction be x/y.

=> x/y + 5/8 = 9

=> x/y = $9 - \frac{5}{8}$ = 67/8 = 8 3/8

25) Answer: D

That fraction = $1 - \frac{1}{4}$ = 3/4 = 6/8

26) Answer: C

Dividing 0.3471 by 89 would yield 0.0039.

27) Answer: B

8/13 = 0.62 and 12/17 = 0.71

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Hence the value of the fraction will be greater than 0.62 but smaller than 0.71.

a) 1/2 = 0.50

b) 2/3 = 0.67

c) 7/8 = 0.87

d) 3/8 = 0.37

Hence option b) has a value of 0.67 which is larger than 0.62 but smaller than 0.71.

Hence the fraction will be 2/3.

28) Answer: B

10/17 = 0.588

14/25 = 0.560

so, 10/17 > 14/25

29) Answer: A

1.004 + 1.40004 + 1.3450 – 1.547 = 2.20204

30) Answer: D

From option a) 0.1 × 0.1 × 0.1 × 0.1=0.0001

From optionb) 0.1 × 0.03/3=0.001

From optionc) 0.1 × 0.01/2=0.0005

From optiond) 0.1 × 0.1 × 0.02 × 0.2=0.00004

Therefore, option d is the smallest.

31) Answer: C

From option-

a) 30/7 = 54/13(Wrong)

b) 30/7 = 44/13(Wrong)

c)30/7 = 4.28

44/13 = 3.38

30/7>44/13(Right)

d) 30/7<44/13(Wrong)

32) Answer: A

Let fraction=x/y

According to Question,

$(x+3)/(y+3) = 11/12$

$\Rightarrow 12x + 36 = 11y + 33$

$\Rightarrow 12x - 11y = -3$ ….. (i)

Again,

$(x - 4)/(y - 4) = 4/5$

$\Rightarrow 5x - 20 = 4y - 16$

$\Rightarrow 5x - 4y = 4$-------(ii)

Solving equation (i) and (ii),

$x = 8$ and $y = 9$

So, that fraction= 8/9

33) Answer: C

Let x be that smaller number.

According to Question,

$4/9 - x = 1/5$

$x = 4/9 - 1/5$

=> (20 – 9)/45 = 11/45

34) Answer: C

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Let that fraction be$x$.

According to Question,

$x \times 7/12 = 3/4$

$\Rightarrow x = 9/7$

x = 1 2/7

35) Answer: B

On rationalization of $1/(5 - 2\sqrt{3})$.

$= 1/(5 - 2\sqrt{3}) \times (5 + 2\sqrt{3})/(5 + 2\sqrt{3})$

$= (5 + 2\sqrt{3})/(25 - 12)$

$= (5 + 2\sqrt{3})/13)$

36) Answer: D

Total length of rod = 417 3/5 = 2088/5 cm

The given rod is to be cut into equal pieces of $23\frac{1}{5}$ cm length.

Number of rods thus formed = Length of total rods / length of one part

=(2088/5)/(23 1/5) = (2088/5)/(116/5) = 2088/5 × 5/116 = 2088/116 = 18

37) Answer: B

Roshan's part = 1/4

Yashi's part = 2/3

∵ Tanya holds the rest.

So part of tanya= 1 – (1/4+2/3)

= 1 – 11/12

= 1/12

38) Answer: D

Let numerator= x and denominator = y

$x+y=13$……(i)

$(x+3)/(y+9)=2/3$

$3x+9= 2y+18$

$3x+9=2y+18$ …… (ii)

Solving equation (i) and (ii),

$x=7, y=6$

Ratio of numerator and denominator=$x : y$=7:6

39) Answer: A

Number of winning matches =36/54 = 0.667

40) Answer: D

According to Question,

$120/150 = 4/x$

$x = (150 \times 4)/120 = 5$

41) Answer: C

By question,

2/3 = 0.66, 1/4 = 0.25 and 0.3 in ascending order

0.25<0.3<0.66

1/4,0.3,2/3

Thus, the ascending order of option (c) is correct.

42) Answer: B

a) 48/60=0.8

b) 48/90=0.5333

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c) 48/120=0.4

d) 48/30=1.6

Hence option (b) is an example of a recurring decimal.

43) Answer: B

$0.\overline{6} = 6/9 = 2/3$

44) Answer: B

a) 162/300=0.54

b) 8/15=0.5333333

c) 30/96=0.3125

d) 21/600=0.035

Thus, option (b) is true.

45) Answer: C

207 ÷ 27 = 207/27 = (23 × 9)/(3×9) = 7 2/3

46) **Answer: A**

11/5 + 5/11

= (121 + 25)/55= 146/55

47) Answer: C

According to Question,

$a+5/3=7/4$

$a=7/4 - 5/3=(21 - 20)/12= 1/12$

48) Answer: D

Difference = 75/36 ─ 30/16 = 25/12─ 15/8=(50─ 45)/24=5/24

49) Answer: A

According to Question,

x and y are correct to 2 decimal places.

X = 4.57 and y = 5.42

Then,x + y = 4.57+ 5.42=9.99

upper limit of x + y =10.000

50) Answer: A

Lost matches =(81─ 54)/81

=27/81

=1/3

=0.333

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