

## Expected Number System Questions for Railway Exams

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### Number System for Railway Group D Exam

1)  $x = [(5.76) - (1.69)] / 3.7$ , find the value of  $x^2$

a) 1.21

b) 1.44

c) 1.96

d) 0.81

2)  $0.04 \times 0.4 \times 0.004 \times 4.00 = ?$

a)  $0.256 \times 10^{-2}$

b)  $0.256 \times 10^{-3}$

c)  $2.56 \times 10^{-2}$

d)  $25.6 \times 10^{-4}$

3) The difference between the place value and the face value of 8 in 428437 is

a) 7992

b) 792

c) 7092

d) 7192

4)  $(\frac{2}{3} \times \frac{5}{4}) + (\frac{4}{8} \times \frac{1}{3}) - (\frac{3}{2} \times \frac{5}{4}) = ?$

a)  $\frac{6}{7}$

b)  $\frac{7}{8}$

c)  $-\frac{7}{8}$

d)  $-\frac{6}{7}$

5)  $\{20 - (27 - 35)\} \div \{-5 \times 4 - (-6)\} + 56 \div (-32 + 18) = ?$

a) -4

b) -6

c) -8

d) 4

6) If  $\sqrt{24} + \sqrt{96} = 14.7$  then find the value of  $8\sqrt{6} + \sqrt{96}$

a) 28.4

b) 27.5

c) 29.4

d) 32.5

7) Write the result of the following in fraction:

$23.4 + 34.56 - 23.2$

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a)  $32 \frac{17}{25}$

b)  $33 \frac{19}{25}$

c)  $34 \frac{19}{25}$

d)  $33 \frac{17}{25}$

8) The digit in the units place of the number represented by  $(7^{74} - 3^{39})$  is

a) 6

b) 7

c) 0

d) 2

9) Which of the following number is divisible by 12?

a) 113108

b) 113112

c) 113096

d) 113118

10) If  $\sqrt{a^x} = \sqrt[3]{a^2}$  then find the value of x

a)  $\frac{2}{3}$

b)  $\frac{3}{2}$

c)  $\frac{1}{3}$

d)  $\frac{4}{3}$

11) In the following expression replace '+' with '÷' and '×' with '+' and '-' with '÷'  $((75 + 25) \times 7) - 10 = x$  then find the value of x

a) 3

b) 12

c) 1

d) 15

12) What is the unit digit in the product  $853 \times 56 \times 1652 \times 484$ ?

a) 3

b) 4

c) 1

d) 6

13)  $989 \times 1011$  is equal to

a) 999789

b) 999879

c) 999779

d) 999979

14) If a fraction when added to  $\frac{17}{13}$  gives 5 then find that fraction?

a)  $\frac{52}{13}$

b)  $\frac{52}{15}$

c)  $\frac{16}{15}$

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d)  $48/13$

15)  $7+2\times 7+2^2\times 7+2\times 7+2^4\times 7+2^5$

a) 218

b) 214

c) 205

d) 207

16) Which of the following number is rational?

a)  $\sqrt[3]{343}$

b)  $\sqrt[4]{64}$

c)  $\sqrt[3]{128}$

d)  $\sqrt[3]{72}$

17)  $186 \div [58 + \{56 + (60 + 36 \div 12 \times 4)\}] = ?$

a) 64

b) 34

c) 24

d) 1

18)  $243 \div [50 - \{43 - (30 + 128 \div (-8) \times 4)\}] = ?$

a) -9

b) 2

c) 1

d) -6

19) Find the square root of  $\sqrt{3721}$

a) 59

b) 51

c) 61

d) 69

20) Find the average of first n natural numbers

a)  $n(n+1)/4$

b)  $n(2n+1)/2$

c)  $(n+1)/2$

d)  $(2n+1)/4$

21) Find the least number which must be added to 6696 to make it perfect square

a) 32

b) 28

c) 24

d) 36

22) What will be the unit digit of  $3^{35}$ ?

a) 3

b) 1

c) 7

d) 9

23)  $1^2+2^2+3^2+....+21^2=?$

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a) 3131

b) 3621

c) 3311

d) 3422

24) If  $321x87$  is divisible by 9, then the digit in place of x is

a) 6

b) 3

c) 2

d) 7

25)  $0.9048/0.87 - 1/25 = ?$

a) 0.90

b) 0.98

c) 1

d) 2

26)  $2\frac{5}{3} + 3\frac{5}{12} + 5\frac{3}{4} - 5\frac{1}{4} = ?$

a)  $5\frac{31}{12}$

b)  $6\frac{32}{13}$

c)  $6\frac{31}{13}$

d)  $5\frac{31}{13}$

27) Which of the following fractions have terminating decimal expressions?

a)  $7/12$

b)  $23/33$

c)  $9/16$

d)  $7/9$

28)  $2+4+6+....+76 = ?$

a) 1149

b) 1159

c) 1234

d) 1482

29) Find the remainder when  $7^{22}+7^{23}+7^{24}+7^{25}$  is divided by 16?

a) 5

b) 17

c) 7

d) 0

30)  $77 \times 128 / 2^6 \div 14 = ?$

a) 21

b) 11

c) 16

d) 13

31)  $(13^2 - 17^2) / (13 + 17)^2 = ?$

a)  $-2/15$

## Expected Number System Questions for Railway Exams

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>b) <math>-3/14</math></p> <p>c) <math>2/15</math></p> <p>d) <math>3/14</math></p> <p>32) <math>1+(1/(1/(1+5/6)))=?</math></p> <p>a) <math>6/17</math></p> <p>b) <math>5/6</math></p> <p>c) <math>7/17</math></p> <p>d) <math>17/6</math></p> <p>33) If <math>53.3/0.13 = 410</math> then find the value of <math>0.0533/0.000013</math></p> <p>a) <math>0.41</math></p> <p>b) <math>0.041</math></p> <p>c) <math>4.1</math></p> <p>d) <math>4.01</math></p> <p>34) If the sum of the number and its reciprocal is <math>82/9</math> then find that number/numbers?</p> <p>a) <math>1/15</math></p> <p>b) <math>1/7</math></p> <p>c) <math>1/9</math></p> <p>d) <math>1/18</math></p> <p>35) If <math>x23y567</math> is divisible by 11 then find the value of <math>x-y</math>?</p> | <p>a) 6</p> <p>b) -6</p> <p>c) 7</p> <p>d) -7</p> <p>36) <math>4/7</math> of a number is equal to <math>36/49</math> then find that number?</p> <p>a) <math>7/9</math></p> <p>b) <math>9/7</math></p> <p>c) <math>6/5</math></p> <p>d) <math>5/6</math></p> <p>37) If <math>16^x/27^y = 256*729</math> then find the value of <math>x/y</math></p> <p>a) <math>2/3</math></p> <p>b) 1</p> <p>c) -1</p> <p>d) <math>-2/3</math></p> <p>38) Find the value of <math>x</math>, if <math>(x+5)^2 - 121 = 0</math> where <math>x</math> is a natural number</p> <p>a) 7</p> <p>b) 5</p> <p>c) 6</p> <p>d) 11</p> <p>39) <math>1/7 + 1/14 + 1/21 + 1/28 + 1/35 + 1/42 = ?</math></p> |
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a)  $20/7$

b)  $5/20$

c)  $7/20$

d)  $20/9$

40) If  $A = (108 \div 12) - (48 \div 6) \div 8/3$  then find the value of  $1/4^{\text{th}}$  of A

a)  $2/3$

b)  $3/2$

c)  $2/5$

d)  $5/2$

41) Find the sum of:  $111^2 + 11^2 + 1^2$

a) 12243

b) 12643

c) 12543

d) 12443

42) How many numbers are there between  $(165)^2$  and  $(174)^2$

a) 3061

b) 3112

c) 3051

d) 3115

43) Which of the following option is correct?

a)  $2/5 > 5/8 > 3/7$

b)  $5/8 > 2/5 > 3/7$

c)  $5/8 > 3/7 > 2/5$

d)  $2/5 > 3/7 > 5/8$

44) Find the product of two consecutive odd/even natural numbers?

a)  $a^2 + 1$

b)  $a^2 - 1$

c)  $a^2 - 2$

d)  $2a + 1$

45) Find the sum of first 12 odd natural numbers?

a) 136

b) 154

c) 144

d) 164

46) If the average of first n natural number is 8 then find the sum of that n natural numbers?

a) 130

b) 145

c) 120

d) 160

## Expected Number System Questions for Railway Exams

47) Find the difference between the two numbers, if the product of those two numbers and the difference between their reciprocals is 450 and  $1/30$  respectively.

- a) 15
- b) 12
- c) 55
- d) 65

48) If the sum of two consecutive odd numbers is 44 then find the product of those two numbers

- a) 443
- b) 463
- c) 483
- d) 471

49) The sum of the digits of a number is 10. When 18 is added to that number the digits of the number interchanged. Find the number?

- a) 46
- b) 55
- c) 82
- d) 37

50) How many numbers between 10 and 100 are divisible by 8?

- a) 13
- b) 10
- c) 12
- d) 11

### ANSWERS

**1) Answer: A**

Solution:

$$x = [(5.76) - (1.69)] / 3.7$$

The above expression can be rewritten as

$$x = [(2.4)^2 - (1.3)^2] / 3.7$$

Expand the numerator based on algebraic identity

$$a^2 - b^2 = (a+b)(a-b)$$

$$x = (2.4 + 1.3)(2.4 - 1.3) / 3.7$$

$$= 3.7 * 1.1 / 3.7$$

$$x = 1.1$$

$$x^2 = 1.21$$

**2) Answer: B**

Solution:

$$= 0.04 \times 0.4 \times 0.004 \times 4.00$$

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$$= 4 \times 10^{-2} \times 4 \times 10^{-1} \times 4 \times 10^{-3} \times 4$$

$$= 256 \times 10^{-6}$$

$$= 0.256 \times 10^{-3}$$

**3) Answer: A**

Solution:

In 428437, place value of 8 = 8000

And the face value is 8

$$\Rightarrow \text{So } (8000 - 8) = 7992$$

**4) Answer: C**

Solution:

$$= (2/3 * 5/4) + (4/8 * 1/3) - (3/2 * 5/4)$$

$$= 10/12 + 4/24 - 15/8$$

$$= (20 + 4 - 45)/24$$

$$= -21/24$$

$$= -7/8$$

**5) Answer: B**

Solution:

$$= \{20 - (27 - 35)\} \div \{-5 \times 4 - (-6)\} + 56 \div (-32 + 18)$$

$$= (20 + 8) \div \{-20 + 6\} + 56 \div (-14)$$

$$= 28 \div (-14) + 56 \div (-14)$$

$$= -2 - 4 = -6$$

**6) Answer: C**

Solution:

Given:

$$\sqrt{24} + \sqrt{96} = 14.7$$

$$2\sqrt{6} + 4\sqrt{6} = 14.7$$

$$6\sqrt{6} = 14.7$$

Question:

$$= 8\sqrt{6} + \sqrt{96}$$

$$= 8\sqrt{6} + 4\sqrt{6}$$

$$= 12\sqrt{6}$$

$$= 2(6\sqrt{6}) = 2(14.7)$$

$$= 29.4$$

**7) Answer: C**

Solution:

$$= 23.4 + 34.56 - 23.2$$

$$= 57.96 - 23.2$$

$$= 34.76$$

$$= 3476/100$$

$$= 3476/100$$

$$= 34 \frac{19}{25}$$

**8) Answer: D**

Solution:



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$$(7^{74} - 3^{39})$$

As Cyclicity of 7 and 3 is 4

=> Divide the power 74 by 4

By doing that, we get a remainder=2

=> Divide the power 39 by 4

By doing that, we get a remainder=3

$$\Rightarrow (9-7)=2$$

$$\text{Ans}=2$$

Hence then unit digit is 2

**9) Answer: B**

Solution:

Factors of 12= 3 and 4

So, the given number is divisible by 3 and 4 then the given number is divisible by 12

Divisibility by 4: last 2 digits of the given number is divisible by 4

Divisibility by 3: sum of the digits of the given number is multiple of 3

a) 113108: last 2 digits are divisible by 4

Sum of the digits=  $1+1+3+1+0+8=5$  not a multiple of 3

b) 113112: Last 2 digits are divisible by 4

Sum of the digits:  $1+1+3+1+1+2=9$  is a multiple of 3

So option b is divisible by 12

c) 113096: Last two digits are divisible by 4

Sum of the digits= $1+1+3+0+9+6=20$  not a multiple of 3

d) 113118: Last two digits are not multiple of 4

**10) Answer: D**

Solution:

$$\sqrt{a^x} = \sqrt[3]{a^2}$$

$$\Rightarrow a^{x/2} = a^{2/3}$$

$$\Rightarrow X/2 = 2/3$$

$$X = 4/3$$

**11) Answer: C**

Solution:

$$((75 + 25) \times 7) - 10 = x$$

Replacing as per the instructions

$$((75 \div 25) + 7) \div 10 = x$$

Simplify as per the BODMAS

$$(3+7) \div 10 = x$$

$$10 \div 10 = x$$

$$x = 1$$

**12) Answer: B**

Solution:

Let us pick up the unit digits and multiply them

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3 in 853

6 in 56

2 in 1652

4 in 484

$$3 \times 6 \times 2 \times 4 = 144$$

The unit digit in the product is 4

**13) Answer: B**

Solution:

$$989 \times 1011 = (1000 - 11) \times (1000 + 11)$$

$$= 1000^2 - 11^2$$

$$= 1000000 - 121 = 999879$$

**14) Answer: D**

Solution:

$$x + 17/13 = 5$$

$$x = 5 - 17/13$$

$$x = 48/13$$

**15) Answer: D**

Solution:

$$= 7 + 2 \times 7 + 2^2 \times 7 + 2 \times 7 + 2^4 \times 7 + 2^5$$

Put braces as per BODMAS rule

$$= 7 + (2 \times 7) + (2^2 \times 7) + (2 \times 7) + (2^4 \times 7) + 2^5$$

$$= 7 + (7 \times 2)(1 + 2 + 1 + 8) + 32$$

$$= 7 + 14(12) + 32$$

$$= 39 + 168$$

$$= 207$$

**16) Answer: A**

Solution:

a)  $\sqrt[3]{343} = 7$  – is a rational number

b)  $\sqrt[4]{64} = 2\sqrt[4]{4}$  – is an irrational number

c)  $\sqrt[3]{128} = 4\sqrt[3]{2}$  – is an irrational number

d)  $\sqrt[3]{72} = 2\sqrt[3]{9}$  – is an irrational number

**17) Answer: D**

Solution:

$$= 186 \div [58 + \{56 + (60 + 36 \div 12 \times 4)\}]$$

$$= 186 \div [58 + \{56 + (60 + 3 \times 4)\}]$$

$$= 186 \div [58 + \{56 + (60 + 12)\}]$$

$$= 186 \div [58 + \{128\}]$$

$$= 1$$

**18) Answer: A**

Solution:

$$= 243 \div [50 - \{43 - (30 + 128 \div (-8) \times 4)\}]$$

$$= 243 \div [50 - \{43 - (30 + (-16) \times 4)\}]$$

$$= 243 \div [50 - \{43 - (30 + (-64))\}]$$

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$$= 243 \div [50 - \{43 + 34\}]$$

$$= 243 \div [50 - 77]$$

$$= 243 \div (-27)$$

$$= -9$$

**19) Answer: C**

Solution:

Check for the nearest values:

$$50^2 = 2500$$

$$60^2 = 3600$$

Since the given number is 3721 which is greater than 3600

So the possible values are 61 and 69. As these two digits alone give the unit digit as 1 upon squaring

$$\text{As } 61^2 = 3721$$

So answer will be 61.

**20) Answer: C**

Solution:

$$\text{Sum of first } n \text{ natural numbers} = n(n+1)/2$$

$$\text{Average of first } n \text{ natural number} = n(n+1)/2n$$

$$= (n+1)/2$$

**21) Answer: B**

Solution:

Check for the nearest square number:

6400 is the nearest square number close to 6696

$$\sqrt{6400} = 80$$

As,  $85^2 = 7225$  which is very much greater than the given number

So check for the squares of number close to 80

$$81^2 = 6561$$

$$82^2 = 6724$$

As,  $82^2$  is close to the given number and is obtained by adding 28 to the given number

$$(\text{i.e.}) = 6724 = 6696 + x$$

$$X = 6724 - 6696$$

$$x = 28$$

**22) Answer: C**

Solution:

As periodicity of 3 is 4 then divide the power with 4 then power the base 3 with the obtained result

$$35/4 \text{ --- remainder is } 3$$

$$3^3 = 27.$$

Hence then unit digit is 7

**23) Answer: C**

Solution:

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$$1^2+2^2+\dots+n^2 = n(n+1)(2n+1)/6$$

$$1^2+2^2+3^2+\dots+21^2=21*22*43/6$$

$$\Rightarrow 3311$$

**24) Answer: A**

Solution:

$$321 \times 87 = 3 + 2 + 1 + x + 8 + 7$$

$$= 21 + x \quad (27 \text{ is divisible by } 9)$$

$$X = 6$$

**25) Answer: C**

Solution:

$$= 0.9048 / 0.87 - 1/25$$

$$= 90.48 / 87 - 0.04$$

$$= 1.04 - 0.04$$

$$= 1$$

**26) Answer: A**

Solution:

$$= 2 \frac{5}{3} + 3 \frac{5}{12} + 5 \frac{3}{4} - 5 \frac{1}{4}$$

Separating the whole number and mixed fraction part

$$= (2+3+5-5) + (5/3+5/12+3/4-1/4)$$

$$= 5 + (5/3+5/12+2/4)$$

$$= 5 + ((20+5+6)/12)$$

$$= 5 + 31/12$$

$$= 5 \frac{31}{12}$$

**27) Answer: C**

Solution:

$$a) 7/12 = 0.5833 \dots$$

$$b) 23/33 = 0.6969 \dots$$

$$c) 9/16 = 0.5625$$

$$d) 7/9 = 0.777 \dots$$

By observing the options, Option c will be the correct answer.

**28) Answer: D**

Solution:

$$2+4+6+\dots+76=2(1+2+3\dots+38)$$

$$\Rightarrow 2*38*39/2 \quad (1+2+\dots+n = n(n+1)/2)$$

$$\Rightarrow 1482$$

**29) Answer: D**

Solution:

$$= 7^{22} + 7^{23} + 7^{24} + 7^{25}$$

$$= 7^{22}(1+7+7^2+7^3)$$

$$= 7^{22}(1+7+49+343)$$

$$= 7^{22}(400)$$

$$= 7^{22}(400)/16$$

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Since 400 is completely divisible by 16 then the remainder is 0

**30) Answer: B**

Solution:

$$= 77 \times 128 / 2^6 \div 14$$

$$= 77 \times 128 / 2^6 \times 1/14$$

$$= 77 \times 128 / 64 \times 1/14$$

$$= (77 \times 2) / 14$$

$$= 154 / 14$$

$$= 11$$

**31) Answer: A**

Solution:

$$= (13^2 - 17^2) / (13 + 17)^2$$

$$= (13 + 17)(13 - 17) / 30^2$$

$$= 30 \times (-4) / 30^2$$

$$= -4 / 30$$

$$= -2 / 15$$

**32) Answer: D**

Solution:

$$= 1 + (1 / (1 / (1 + 5/6)))$$

$$= 1 + (1 / (1 / (11/6)))$$

$$= 1 + (1 / (6/11))$$

$$= 1 + 11/6$$

$$= 17/6$$

**33) Answer: C**

Solution:

$$= 0.0533 / 0.000.013$$

$$= 0.0533 / 0.013$$

Multiply by 1000 on both numerator and denominator

$$= 53.3 / 13$$

$$= 4.1$$

**34) Answer: C**

Solution:

Let the number be x

$$x + 1/x = 82/9$$

$$x^2 + 1 = 82x/9$$

$$9x^2 + 9 - 82x = 0$$

$$9x^2 - 82x + 9 = 0$$

$$9x^2 - 81x - x + 9 = 0$$

$$9x(x-9) - (x-9) = 0$$

$$(x-9)(9x-1) = 0$$

$$X = 9, 1/9$$

**35) Answer: D**

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Solution:

If a number is divisible by 11 then the difference between the sum of the digits in odd places and the sum of the digits in even places is equal to 0

$$(x+3+5+7) - (2+y+6) = 0$$

$$X + 15 - y - 8 = 0$$

$$X - y = -7$$

**36) Answer: B**

Solution:

Let the number be x

$$\text{Then } \frac{4}{7}(x) = \frac{36}{49}$$

$$X = \frac{(36/49)(7/4)}$$

$$X = 9/7$$

**37) Answer: C**

Solution:

$$16^x/27^y = 256 \times 729$$

$$2^{4x}/3^{3y} = 2^8 \times 3^6$$

$$2^{4x} \times 3^{(-3y)} = 2^8 \times 3^6$$

On comparing powers on both sides

$$4x=8 \text{ and } -3y=6$$

$$x=2 \text{ and } y=-2$$

$$x/y = 2/(-2) = -1$$

**38) Answer: C**

Solution:

$$(x+5)^2 - 121 = 0$$

$$(x+5)^2 = 121$$

Taking square root on both sides

$$x+5 = 11$$

As, x is a natural number then neglect the negative values

$$x = 11 - 5 = 6$$

**39) Answer: C**

Solution:

$$= \frac{1}{7} + \frac{1}{14} + \frac{1}{21} + \frac{1}{28} + \frac{1}{35} + \frac{1}{42}$$

$$= \frac{1}{7}(1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6})$$

$$= \frac{1}{7}(60 + 30 + 20 + 15 + 12 + 10/60)$$

$$= \frac{1}{7}(147/60)$$

$$= \frac{21}{60} = \frac{7}{20}$$

**40) Answer: B**

Solution:

$$A = (108 \div 12) - (48 \div 6) \div 8/3$$

$$A = 9 - 8 \times 3/8$$

$$A = 6$$

$$\frac{1}{4} \text{ of } A = 6/4 = \frac{3}{2}$$

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**41) Answer: D**

Solution:

$$1^2 = 1$$

$$11^2 = 121$$

$$111^2 = 12321$$

$$111^2 + 11^2 + 1^2 = 12321 + 121 + 1$$

$$= 12443$$

**42) Answer: C**

Solution:

Consider  $165 = x$  then  $174 = x + 9$

$$174^2 - 165^2 = (x+9)^2 - x^2$$

$$174^2 - 165^2 = x^2 + 18x + 81 - x^2$$

$$174^2 - 165^2 = 18x + 81$$

Put the value of  $x$  in above expression

$$174^2 - 165^2 = 18(165) + 81$$

$$174^2 - 165^2 = 2970 + 81$$

$$174^2 - 165^2 = 3051$$

**43) Answer: C**

Solution:

To find the greatest among these proper fractions made the denominator of the fractions equal

For that find the LCM of the denominators which is 280

$$2/5 = 112/280$$

$$5/8 = 175/280$$

$$3/7 = 120/280$$

$$175/280 > 120/280 > 112/280$$

$$5/8 > 3/7 > 2/5$$

So, option c is correct

**44) Answer: B**

Solution:

Let  $a$  be any number

$a - 1$  and  $a + 1$  be the preceding and succeeding numbers respectively

$$\text{Product of this two number} = (a - 1)(a + 1) = a^2 - 1$$

{If  $a$  is even number then  $(a-1)$  and  $(a+1)$  be the consecutive odd numbers.

If  $a$  is odd number then  $(a-1)$  and  $(a+1)$  be the consecutive even numbers.}

**45) Answer: C**

Solution:

$$\text{Sum of first } n \text{ odd natural number} = n^2$$

$$\text{Sum of first 12 odd natural number} = 12^2$$

$$= 144$$

**46) Answer: C**

## Expected Number System Questions for Railway Exams

Solution:

The average of  $n$  natural number is given by  $(n+1)/2$

$$(n + 1)/2 = 8$$

$$N + 1 = 16$$

$$N = 15$$

Since  $n = 15$ , then find the sum of first 15 natural numbers

$$= 15 \times 16 / 2 = 120$$

**47) Answer: A**

Solution:

Let the numbers be  $x$  and  $y$

$$xy=270 \text{ and } 1/x-1/y=1/90$$

$$(y-x)/xy=1/90$$

$$(y-x)/270=1/90$$

$$(y - x) = 3$$

Therefore the difference between those two numbers = 3

**48) Answer: C**

Solution:

Let the numbers are  $x$  and  $x+2$

$$x+x+2=44$$

$$2x+2=44$$

$$x+1=22$$

$$x=21$$

$$x+2=23$$

Product of those two numbers=  $x(x+2)$

$$=21 \times 23=483$$

**49) Answer: A**

Solution:

Let the number=  $10x + y$  --- (1)

Sum of the digits =  $x + y = 10$  --- (2)

If 18 is added then the digits get reversed

$$10x + y + 18 = 10y + x$$

$$9x + 18 = 9y$$

$$X - y = -2 \text{ ---(3)}$$

Solving (2) and (3)

$$X = 4 \text{ and } y = 6$$

$$(1) \Rightarrow 10(4) + 6 = 46$$

**50) Answer: D**

Solution:

The 1<sup>st</sup> number divisible by 8 in the given range is= 16

The last number divisible by 8 in the given range is=96

As, 96 is 12 times of 8 and 16 is 2 times of 8

Then the total number of numbers=  $(12-1)= 11$



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