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**Ans. (a)** From option (a),

$$\begin{array}{r} 99 \\ 9 \overline{) 9801} \\ \underline{9} \phantom{01} \\ 189 \phantom{01} \\ \underline{18} \phantom{01} \\ 9 \phantom{01} \\ \underline{9} \phantom{01} \\ \times \times \times \times \end{array}$$

Hence, 9801 is a perfect square of 99.

**262. If the last digit of the square of a number is 1. Find the last digit of its cube.**

- (a) Only 9 (b) 1 or 9  
(c) Any odd number (d) Only 1

**RRB JE - 27/06/2019 (Shift-I)**

**Ans : (b)** Let the number be 9. The last digit of whose square is 1. Which is as follows-

$$9^2 = 81$$

Last digit of 729 which is cube of 9 = 9

Let the number be 11. The last digit of whose square is 1.

Which is as follows-

$$11^2 = 121$$

The last digit of the cube of 11-

$$11^3 = 1331$$

Hence the last digit = 1

Hence the number will be 1 or 9.

**263. The sum and the difference of two numbers are 25 and 3 respectively. Find the difference of their squares.**

- (a) 165 (b) 75  
(c) 154 (d) 140

**RRB JE - 27/06/2019 (Shift-III)**

**Ans : (b)** Let the two numbers are x and y  
According to the question

$$x + y = 25 \quad \text{---(i)}$$

$$x - y = 3 \quad \text{---(ii)}$$

$$x^2 - y^2 = (x + y)(x - y) = 25 \times 3 = 75$$

Hence, the difference of their squares = 75

**264. How many perfect squares are there between 100 and 200?**

- (a) 7 (b) 4  
(c) 6 (d) 5

**RRB JE - 27/06/2019 (Shift-III)**

**Ans : (b)** Perfect square numbers greater than 100 or nearest to 100 =  $121 = (11)^2$

Perfect square numbers smaller than 200 or nearest to 200 =  $196 = (14)^2$

The numbers from  $(11)^2$  to  $(14)^2$  are = 121, 144, 169, 196

Therefore, there will be 4 such perfect square numbers between 100 and 200.

**265. Find the least number that should be added to 4042 to make it a perfect square.**

- (a) 41 (b) 54  
(c) 64 (d) 58

**RRB Group-D - 22/09/2018 (Shift-III)**

**Ans. (b) :** Square root of 4042,

$$\begin{array}{r} 63 \\ 6 \overline{) 4042} \\ \underline{6} \phantom{02} \\ +6 \phantom{02} \\ \underline{12} \phantom{02} \\ 123 \phantom{02} \\ \underline{12} \phantom{02} \\ 369 \\ \underline{36} \phantom{02} \\ 73 \end{array}$$

Square of 64 =  $64 \times 64 = 4096$

Hence, the required number =  $4096 - 4042 = 54$

By adding 54, the number 4042 will become a perfect square.

**266. Divide the number 137592 by the smallest number that leaves no remainder and quotient is a perfect cube. Find the cube root of the quotient.**

- (a) 8 (b) 2 (c) 4 (d) 6

**RRB Group-D - 05/12/2018 (Shift-II)**

**Ans. (d)**  $137592 = 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 7 \times 7 \times 13$

Hence, it is clear that, dividing 137592 by  $7 \times 7 \times 13 = 637$  will leave no remainder And quotient 216 will be a perfect cube.

$$216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$$

Hence, the required cube root =  $2 \times 3 = 6$

**267. A positive number exceed its square root by 30. Find the number.**

- (a) 16 (b) 36  
(c) 25 (d) 49

**RRB NTPC 02.04.2016 Shift : 3**

**Ans : (b)** Let the number be x, then-

$$x = \sqrt{x} + 30$$

$$x - 30 = \sqrt{x}$$

On squaring in both side-

$$(x - 30)^2 = (\sqrt{x})^2$$

$$x^2 + 900 - 60x = x$$

$$x^2 - 60x - x + 900 = 0$$

$$x^2 - 61x + 900 = 0$$

$$x^2 - 36x - 25x + 900 = 0$$

$$x(x - 36) - 25(x - 36) = 0$$

$$(x - 36)(x - 25) = 0$$

$$x - 36 = 0 \text{ or } x - 25 = 0$$

$$x = 36 \text{ or } x = 25$$

25 is not more than its square root, which does not follow the condition.

Hence, the required number will be  $x = 36$ .

**268. What smallest number should be added to the sum of squares of 15 and 14, so that the resulting number is a perfect square?**

- (a) 17 (b) 20 (c) 11 (d) 9

**RRB NTPC 29.03.2016 Shift : 1**

**Ans : (b)**  $15^2 + 14^2 = 225 + 196 = 421$

Let the number to added be x,

$$421 + x = 441$$

$$\Rightarrow x = 441 - 421 = 20$$

Hence, the required number = 20

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- 269. Calculate the sum of squares of numbers from 1 to 9.**  
 (a) 284 (b) 285  
 (c) 385 (d) 380

**RRB NTPC 27.04.2016 Shift : 1**

**Ans : (b)** The sum of squares of first n numbers  

$$= \frac{n(n+1)(2n+1)}{6}$$

∴ The sum of squares from 1 to 9 will be-

$$= \frac{9(9+1)(18+1)}{6} = \frac{9 \times 10 \times 19}{6} = 285$$

- 270. Calculate the sum of squares of number from 1 to 10.**  
 (a) 384 (b) 285  
 (c) 385 (d) 380

**RRB NTPC 30.04.2016 Shift : 2**

**Ans : (c)** The sum of squares of first n numbers  

$$= \frac{n(n+1)(2n+1)}{6}$$

The sum of squares of the numbers from 1 to 10 will be-

$$= \frac{10(10+1)(20+1)}{6} = \frac{10 \times 11 \times 21}{6} = 385$$

- 271. Find the least number which should be added to 7864, to make it a perfect square.**  
 (a) 61 (b) 57  
 (c) 71 (d) 79

**RRB Group-D – 11/12/2018 (Shift-III)**

**Ans : (b)** Adding 57 to 7864, gives 7921 which is a perfect square of 89.  
 Hence, it is clear that adding 57 to 7864 will make the number a perfect square.

- 272. The number 4050 becomes a perfect square when multiplying by a positive integer. Find the square root of the number.**  
 (a) 95 (b) 80  
 (c) 90 (d) 85

**RRB Group-D – 01/10/2018 (Shift-III)**

**Ans : (c)** ∵  $4050 = 2 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5$

Hence, number 4050 becomes a perfect square when multiplied by 2 =  $4050 \times 2 = 8100$

∴ The required square root of the number 8100  
 $= 2 \times 3 \times 3 \times 5 = 90$

- 273. Which of the following numbers is a perfect square?**  
 (a) 0.09 (b) 8.1  
 (c) 0.025 (d) All

**RRB NTPC 29.03.2016 Shift : 2**

**Ans : (a)**  $0.09 = (0.3)^2$

Hence, only 0.09 is a perfect square number.

## Type - 7

- 274. Find the sum of prime factors of  $9^6 \times 12^4 \times 7^7$**   
 (a) 13 (b) 12  
 (c) 14 (d) 11

**RRB Group-D 26/08/2022 (Shift-III)**

**Ans. (b) :**  $9^6 \times 12^4 \times 7^7$   
 $= 3^{12} \times 3^4 \times 2^8 \times 7^7$   
 $= 3^{16} \times 2^8 \times 7^7$

Sum of prime factors

$$= 3+2+7 = 12$$

- 275. For any natural number n,  $6^n - 5^n$  always ends with ;**  
 (a) 7 (b) 1  
 (c) 5 (d) 3

**RRB NTPC 28.12.2020 (Shift-II) Stage Ist**

**Ans. (b) :** The unit value of  $6^n - 5^n$  for any natural number 'n' will always be 1 because 6 can be any natural number in the power that units number in the power of 5 has its unit digit as 5.

- 276. What is the total number of odd and even divisors of 120, respectively?**  
 (a) 12,4 (b) 16,0  
 (c) 4,12 (d) 8,8

**RRB NTPC 01.02.2021 (Shift-II) Stage I**

**Ans. (c) :** Divisors of 120–

1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24  
 30, 40, 60, 120

Number of even divisors – 12,

Number of odd divisors – 4

- 277. If the sum of five consecutive multiples of 2 is 660, then find the largest number.**  
 (a) 162 (b) 130  
 (c) 125 (d) 136

**RRB NTPC 15.02.2021 (Shift-II) Stage Ist**

**Ans. (d) :** Let five consecutive multiple of 2 –  
 $2x, 2x+2, 2x+4, 2x+6, 2x+8$

According to the question,

$$2x + 2x + 2 + 2x + 4 + 2x + 6 + 2x + 8 = 660$$

$$10x + 20 = 660$$

$$10x = 640$$

$$x = 64$$

Hence, largest number =  $2x + 8 = 2 \times 64 + 8$   
 $= 128 + 8$

$$= 136$$

- 278. How many factors of  $2^7 \times 3^4 \times 5^3 \times 7$  are even ?**

- (a) 40 (b) 280  
 (c) 320 (d) 84

**RRB NTPC 31.01.2021 (Shift-I) Stage Ist**

**RRB NTPC 14.03.2021 (Shift-I) Stage Ist**

**Ans. (b) :**  $2^7 \times 3^4 \times 5^3 \times 7$  Number of factors.

$$= (7+1)(4+1)(3+1)(1+1)$$

$$= 8 \times 5 \times 4 \times 2$$

$$= 320$$

∴ Number of even factors = 320 – total no. of odd factors.

$$= 320 - \{(4+1)(3+1)(1+1)\}$$

$$= 320 - \{5 \times 4 \times 2\}$$

$$= 320 - 40$$

$$= 280$$

- 279. Find the digit in the unit's place of  $124^n + 124^{(n+1)}$ , where n is any whole number.**

- (a) 4 (b) 8  
 (c) 2 (d) 0

**RRB NTPC 17.02.2021 (Shift-II) Stage Ist**



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**Ans. (d) :**  $124^n + 124^{(n+1)}$   
On putting  $n = 1$   
 $= 124 + (124)^2$   
For unit digit  $4 + 6 = 10$   
Hence, It is clear that the digit come in the unit place will be '0'.

**280. What is the unit digit in the following product?**  
 **$91 \times 92 \times 93 \times \dots \times 99$**   
(a) 2 (b) 1 (c) 4 (d) 0

**RRB NTPC 09.02.2021 (Shift-II) Stage Ist**

**Ans. (d) :**  $\because 91 \times 92 \times 93 \times 94 \times 95 \times 96 \times 97 \times 98 \times 99$   
It is clear that multiplying by taking unit digits of all the numbers will give '0' i.e. where  $2 \times 5$  comes then its unit digit is always zero.

**281. Find the number of factors of 4200.**  
(a) 48 (b) 56 (c) 64 (d) 46

**RRB NTPC 26.07.2021 (Shift-II) Stage Ist**

**Ans. (a) :**  $4200 = 2 \times 2 \times 2 \times 5 \times 3 \times 7$   
 $= 2^3 \times 5^2 \times 3^1 \times 7^1$   
The number of factors  $= (3+1) \times (2+1) \times (1+1) \times (1+1)$   
 $= 4 \times 3 \times 2 \times 2$   
 $= 48$

**282. How many factors does the number 12288 have?**  
(a) 24 (b) 26  
(c) 28 (d) 22

**RRB NTPC 23.07.2021 (Shift-I) Stage Ist**

**Ans. (b) :**  $12288 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 2^{12} \times 3^1$   
Hence numbers of factors  $= (12 + 1) \times (1 + 1)$   
 $= 13 \times 2$   
 $= 26$

**283. If a positive number N, when divided by 5 leaves a remainder 3, then the unit's place digit of N is?**  
(a) 0 or 5 (b) 0 or 2  
(c) 3 or 8 (d) 1 or 5

**RRB NTPC 25.01.2021 (Shift-I) Stage Ist**

**Ans. (c) :** Required positive number  
 $= 5K + 3$  ( $\because K = 0, 1, 2, \dots$ )  
 $= 5 \times 0 + 3 = 3$  (On putting  $K = 0$ )  
 $= 5 \times 1 + 3 = 8$  (On putting  $K = 1$ )  
Hence, unit digit of  $N = 3$  or  $8$

**284. The unit digit in  $4 \times 38 \times 764 \times 1256$  is :**  
(a) 6 (b) 8  
(c) 4 (d) 5

**RRB NTPC 28.12.2020 (Shift-I) Stage Ist**

**Ans. (b) :**  
 $4 \times 38 \times 764 \times 1256$   
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$   
 $4 \times 8 \times 4 \times 6$   
 $= 32 \times 24$   
 $\downarrow \quad \downarrow$   
 $= 2 \times 4$   
Hence unit digit = 8

**285. Unit digit of  $(1373)^{36} - (1442)^{20}$  is -**  
(a) 2 (b) 4  
(c) 5 (d) 3

**RRB ALP CBT-2 Physics & Maths 22-01-2019 (Shift-I)**

**Ans. (c) :**  $(1373)^{36} - (1442)^{20}$   
 $= (3)^{36} - (2)^{20}$   
 $= (3)^{9 \times 4} - (2)^{5 \times 4}$   
 $= (3)^4 - (2)^4$   
 $= 81 - 16$   
 $= 65$   
 $= 5$

**286. How many of the factors of 256 are perfect squares?**  
(a) 5 (b) 3  
(c) 6 (d) 4

**RRB ALP & Tec. (20-08-18 Shift-II)**

**Ans :** (a) Perfect square factors of 256 = 1, 4, 16, 64, 256  
Hence, the required number of perfect square factors = 5

**287. Which of these numbers has the highest number of divisors?**  
(a) 156 (b) 240  
(c) 172 (d) 200

**RRB JE - 23/05/2019 (Shift-I)**

**Ans : (b)** From options—  
 $156 = 2^2 \times 3^1 \times 13^1 = (2+1)(1+1)(1+1) = 12$  (divisor)  
 $240 = 2^4 \times 3^1 \times 5^1 = (4+1)(1+1)(1+1) = 20$  (divisor)  
 $172 = 2^2 \times 43^1 = (2+1)(1+1) = 6$  (divisor)  
 $200 = 2^3 \times 5^2 = (3+1)(2+1) = 12$  (divisor)  
Hence, It is clear that the number of the divisors of 240 is highest.

**288. Find the unit digit in given factor of  $(3451)^{51} \times (531)^{43}$ .**  
(a) 6 (b) 4  
(c) 1 (d) 9

**RRB RPF-SI -11/01/2019 (Shift-I)**

**Ans : (c)** The given expression is  $(3451)^{51} \times (531)^{43}$   
According to the question it is clear that the unit digit of 3451 and 531 is 1, so the unit digit of their product will also be 1.

**289. How many multiples of  $2^8 \times 3^2 \times 5^3 \times 7^5$  are even numbers?**  
(a) 288 (b) 168  
(c) 576 (d) 464

**RRB Group-D - 06/12/2018 (Shift-II)**

**Ans. (c) :** The number of factors of  $2^8 \times 3^2 \times 5^3 \times 7^5 = (8+1)(2+1)(3+1)(5+1) = 648$   
 $\therefore$  The number of even factors (multiples) = 648 – The number of total odd factors  
 $= 648 - \{(2+1)(3+1)(5+1)\}$   
 $= 648 - \{3 \times 4 \times 6\}$   
 $= 648 - 72 = 576$

**290. How many factors of 729 are perfect squares?**  
(a) 5 (b) 4  
(c) 3 (d) 2

**RRB Group-D - 01/10/2018 (Shift-I)**



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**Ans. (c) :** The factors of 729,

3	729
3	243
3	81
3	27
3	9
3	3
	1

Perfect squares =  $\overline{3 \times 3} \times \overline{3 \times 3} \times \overline{3 \times 3}$

Hence, total 3 factors of 729 (9,9,9) are perfect squares.

**291. How many multiples of  $2^9 \times 3^5 \times 5^4 \times 7^6$  are odd numbers?**

- (a) 288 (b) 144  
(c) 210 (d) 140

**RRB Group-D – 06/12/2018 (Shift-III)**

**Ans. (c) :** The required odd multiple number

$$= (5+1) \times (4+1) \times (6+1) \\ = 6 \times 5 \times 7 = 210$$

**292. Find the last digit of  $213^6$  ?**

- (a) 6 (b) 3  
(c) 7 (d) 9

**RRB Group-D – 05/12/2018 (Shift-II)**

**Ans. (d)** The unit digit of  $213^6$

$$213^6 = (213^4 \times 213^2) \\ 1 \times 9 = 9$$

**293. The smallest natural number, by which 216 should be multiplied, so that the number of factors of the product is odd?**

- (a) 4 (b) 6  
(c) 12 (d) 8

**RRB Group-D – 11/12/2018 (Shift-I)**

**Ans. (b)**

The number of multiples of  $(216 = 2^3 \times 3^3)$  is:  
 $= (3+1)(3+1) = 4 \times 4 = 16$  (even)

The smallest natural number, by which 216 should be multiplied, so that the number of factors of the product is odd = 6

$$\therefore \text{Required number of multiples in } 216 \times 6 = 2^4 \times 3^4 \\ = (4+1)(4+1) = 25$$

**294. What is the unit digit of  $[4523^{1632} \times 2224^{1632} \times 3225^{1632}]$**

- (a) 1 (b) 0  
(c) 4 (d) 5

**RRB NTPC 18.01.2017 Shift : 3**

**Ans : (b)**  $[(4523)^{1632} \times (2224)^{1632} \times (3225)^{1632}]$

$$\Rightarrow (3)^4 \times (4)^4 \times (5)^4$$

$$81 \times 256 \times 625$$

$$1 \times 6 \times 5$$

$$30 \Rightarrow \boxed{0}$$

**295. Calculate the total prime factors in the product of  $\{(8)^{10} \times (9)^7 \times 7^8\}$**

- (a) 45 (b) 54  
(c) 52 (d) 65

**RRB NTPC 18.04.2016 Shift : 2**

**Ans : (c)**  $(8)^{10} \times (9)^7 \times 7^8$

$$= (2^3)^{10} \times (3^2)^7 \times (7)^8 \\ = 2^{30} \times 3^{14} \times 7^8$$

Hence, the total prime factors =  $30+14+8 = 52$

**296. Calculate the total prime factors in the product of  $\{(16)^7 \times (27)^6 \times 5^9\}$**

- (a) 28 (b) 43  
(c) 55 (d) 56

**RRB NTPC 16.04.2016 Shift : 2**

**Ans : (c)** Total prime factors  $\{(16)^7 \times (27)^6 \times 5^9\}$

$$= (2^4)^7 \times (3^3)^6 \times 5^9 \\ = 2^{28} \times 3^{18} \times 5^9 \\ = 28 + 18 + 9 = 55$$

**297. Find the unit digit in the product of  $(4211)^{102} \times (361)^{52}$**

- (a) 3 (b) 1  
(c) 4 (d) 7

**RRB NTPC 16.04.2016 Shift : 3**

**Ans : (b)**

The required unit digit in  $(4211)^{102} \times (361)^{52}$   
 $\Rightarrow (1)^{102} \times (1)^{52} = 1 \times 1 = 1$

**298. Find the unit digit in the following  $(1234)^{102} + (1234)^{103}$**

- (a) 2 (b) 4  
(c) 0 (d) 1

**RRB NTPC 28.04.2016 Shift : 2**

**Ans : (c)** Given expression:  $(1234)^{102} + (1234)^{103}$

The unit digit,

$$= (4)^{102} + (4)^{103} \\ = (4^2)^{51} + (4^2)^{51} \times 4^1 \\ = (16)^{51} + (16)^{51} \times 4^1 \\ = 6 + 6 \times 4 \\ = 6 + 24 = 30$$

Hence, the unit digit will be 0.

**299. How many factors of 512 are perfect squares?**

- (a) 6 (b) 4  
(c) 3 (d) 5

**RRB Group-D – 28/09/2018 (Shift-I)**

**Ans : (d)** The factors of 512

$$= 1, 2, 4, 8, 16, 32, 64, 128, 256, 512$$

In which = 1, 4, 16, 64, 256 are perfect squares

So, the total number of perfect squares factors is 5.

**300. Which is the smallest positive integer or natural number, when divides 1920 so that the number of factors of quotient is odd?**

- (a) 40 (b) 10  
(c) 20 (d) 30

**RRB Group-D – 12/12/2018 (Shift-I)**

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**Ans. (d)** From options,

$$\text{Number of factors in } \frac{1920}{40} = 48 = 2^4 \times 3$$

$$\text{is } (4+1)(1+1) = 10 \text{ (Even)}$$

$$\text{Number of factors in } \frac{1920}{10} = 192 = 2^6 \times 3$$

$$\text{is } (6+1)(1+1) = 14 \text{ (Even)}$$

$$\text{Number of factors in } \frac{1920}{20} = 96 = 2^5 \times 3$$

$$\text{is } (5+1)(1+1) = 12 \text{ (Even)}$$

$$\text{Number of factors in } \frac{1920}{30} = 64 = 2^6$$

is  $(6+1) = 7$  (Odd)  
Hence, option (d) will be required answer.

**301. How many factors of the number  $2^{10} \times 3^6 \times 5^3 \times 7^5$  are divisible by 2160?**

- (a) 180 (b) 336  
(c) 504 (d) 560

**RRB Group-D – 11/12/2018 (Shift-III)**

**Ans : (c)** Factors of  $2160 = 2^4 \times 3^3 \times 5^1$

Let the total factors are n.

$$n = \frac{2^{10} \times 3^6 \times 5^3 \times 7^5}{2^4 \times 3^3 \times 5^1}$$

$$n = 2^6 \times 3^3 \times 5^2 \times 7^5$$

$$\text{So, the total number of factors} = (6+1)(3+1)(2+1)(5+1) = 7 \times 4 \times 3 \times 6 = 504$$

## Type - 8

**302. What is the place value of 5 in the number 56789214?**

- (a)  $5 \times 10^6$  (b)  $5 \times 10^4$   
(c)  $5 \times 10^7$  (d)  $5 \times 10^5$

**RRB NTPC 29.01.2021 (Shift-II) Stage I**

**Ans. (c) :** The place value of 5 in 56789214 –

$$\begin{array}{r} 56789214 \\ \downarrow \\ 5 \times 10^7 \end{array}$$

**303. Find the sum of the place value and the face value of 7 in the number 53736.**

- (a) 77 (b) 707  
(c) 770 (d) 777

**RRB NTPC 29.01.2021 (Shift-II) Stage Ist**

**Ans. (b) :** The place value and the face value of 7 in the number 53736.

$$\text{Place value of 7} = 700$$

$$\text{Face value of 7} = 7$$

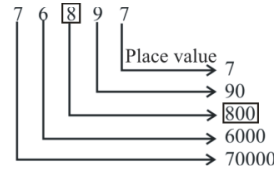
$$\text{Required sum} = 700 + 7 = 707$$

**304. In the number 76897, what is the place value of 8?**

- (a) 8 (b) 8000  
(c) 800 (d) 80

**RRB NTPC 09.03.2021 (Shift-II) Stage Ist**

**Ans. (c) :**



Hence, place value of 8 in 76897 will be 800.

**305. The face value of 8 in 758639 is :**

- (a) 8000 (b) 80  
(c) 800 (d) 8

**RRB NTPC 25.01.2021 (Shift-II) Stage Ist**

**Ans. (d) :** In the given number = 758639

The face value of 8 = 8

**306. Find the difference of the place and face values of 6 in 516372**

- (a) 5998 (b) 6698  
(c) 5394 (d) 5994

**RRB NTPC 25.01.2021 (Shift-II) Stage Ist**

**Ans. (d) :** The place values of 6 in 516372 –

5 1 6 3 7 2

$$\begin{array}{r} 516372 \\ \downarrow \\ 6 \times 1000 = 6000 \end{array}$$

the face values of 6 = 6

$$\text{Required difference} = 6000 - 6 = 5994$$

**307. The sum of the place values of 3 in 3636 is:**

- (a) 330 (b) 3030  
(c) 3 (d) 3003

**RRB NTPC 25.01.2021 (Shift-II) Stage Ist**

**Ans. (b) :** The place value of 3 in 3636.

3 6 3 6

$$\begin{array}{r} 3636 \\ \downarrow \\ 3 \times 10 = 30 \end{array}$$

$$\begin{array}{r} 3636 \\ \downarrow \\ 3 \times 1000 = 3000 \end{array}$$

$$\text{Sum of place values of 3} = 3000 + 30 = 3030$$

**308. The difference between the place values of 2 and 3 in the number 128935 is:**

- (a) 300 (b) 19970  
(c) 20000 (d) 30

**RRB NTPC 02.03.2021 (Shift-I) Stage Ist**

**Ans. (b) :**

1 2 8 9 3 5

$$\begin{array}{r} 128935 \\ \downarrow \\ \text{Place value} = 30 \end{array}$$

$$\begin{array}{r} 128935 \\ \downarrow \\ \text{Place value} = 20000 \end{array}$$

$$\text{Required difference} = 20000 - 30 = 19970$$

**309. The sum of the place values of 9 in 96961 is:**

- (a) 9000 (b) 18  
(c) 9090 (d) 90900

**RRB NTPC 19.01.2021 (Shift-I) Stage Ist**

**Ans. (d) :** Sum of the place value of 9 in number 96961

$$= 90000 + 900$$

$$= 90900$$

Hence, option (d) is correct.

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$$\frac{10}{11} + x = \frac{11}{10}$$

$$x = \frac{11}{10} - \frac{10}{11} = \frac{121 - 100}{110} = \frac{21}{110}$$

Hence the required number is  $\frac{21}{110}$ .

140. What should be added to  $5\frac{3}{5}$  to get  $8\frac{3}{7}$ ?

- (a)  $\frac{99}{35}$  (b)  $\frac{96}{35}$   
(c)  $\frac{99}{33}$  (d)  $\frac{94}{35}$

**RRB Group-D – 25/09/2018 (Shift-III)**

**Ans. (a) :** Let the required number be x.  
According to the question,

$$5\frac{3}{5} + x = 8\frac{3}{7}$$

$$x = 8\frac{3}{7} - 5\frac{3}{5} = \frac{59}{7} - \frac{28}{5}$$

$$= \frac{295 - 196}{35} = \frac{99}{35}$$

Hence, the required number is  $\frac{99}{35}$ .

141. The sum of two fractions is  $\frac{7}{6}$ . One of the fraction is  $\frac{3}{4}$ . Find the other.

- (a)  $\frac{4}{12}$  (b)  $\frac{5}{12}$   
(c)  $\frac{4}{2}$  (d)  $\frac{1}{12}$

**RRB Group-D – 26/09/2018 (Shift-III)**

**Ans : (b)** Let the other fraction is x.  
According to the question,

$$\Rightarrow x + \frac{3}{4} = \frac{7}{6} \Rightarrow x = \frac{7}{6} - \frac{3}{4}$$

$$\Rightarrow x = \frac{14 - 9}{12} = \frac{5}{12}$$

Hence, the required fraction is  $\frac{5}{12}$ .

142. A fraction when added to  $\frac{7}{3}$ , gives 4. Find the fraction.

- (a)  $1\frac{2}{3}$  (b)  $\frac{11}{2}$   
(c)  $-\frac{1}{2}$  (d)  $\frac{2}{3}$

**RRB Group-D – 28/09/2018 (Shift-I)**

**Ans : (a)** Let the required fraction be x.  
According to the question,

$$\Rightarrow \frac{x}{1} + \frac{7}{3} = 4$$

$$\Rightarrow \frac{3x + 7}{3} = 4$$

$$\Rightarrow 3x + 7 = 4 \times 3$$

$$\Rightarrow 3x + 7 = 12 \Rightarrow 3x = 12 - 7 \Rightarrow 3x = 5$$

$$\Rightarrow x = \frac{5}{3} = \left(1\frac{2}{3}\right)$$

Hence, the required fraction is  $1\frac{2}{3}$ .

143. The difference between two fractions is  $\frac{5}{6}$ . The smaller one is  $\frac{3}{4}$ . Find the other.

- (a)  $\frac{1}{12}$  (b)  $\frac{19}{24}$   
(c)  $\frac{19}{12}$  (d)  $\frac{8}{10}$

**RRB Group-D – 22/10/2018 (Shift-II)**

**Ans : (c)** Let the other fraction be x.  
According to the question,

$$x - \frac{3}{4} = \frac{5}{6}$$

$$\Rightarrow x = \frac{5}{6} + \frac{3}{4}$$

$$x = \frac{38}{24} = \frac{19}{12}$$

Hence, the other fraction is  $\frac{19}{12}$ .

144. The value of  $\frac{5}{3} + \frac{3}{5} = ?$

- (a)  $\frac{15}{8}$  (b)  $\frac{8}{15}$   
(c)  $2\frac{4}{15}$  (d)  $\frac{8}{8}$

**RRB Group-D – 22/10/2018 (Shift-II)**

**Ans : (c)** From given expression,

$$\Rightarrow \frac{5}{3} + \frac{3}{5}$$

$$= \frac{25 + 9}{15}$$

$$= \frac{34}{15} = 2\frac{4}{15}$$

145. The difference of  $\frac{25}{12}$  and  $\frac{15}{8} = ?$

- (a)  $\frac{10}{24}$  (b)  $\frac{7}{13}$   
(c)  $\frac{10}{4}$  (d)  $\frac{5}{24}$

**RRB Group-D – 06/12/2018 (Shift-II)**

**Ans. (d)** The difference of  $\frac{25}{12}$  and  $\frac{15}{8}$ ,

$$\frac{25}{12} - \frac{15}{8} = \frac{50 - 45}{24} = \frac{5}{24}$$

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146. To get  $\frac{25}{3}$ ,  $\frac{5}{12}$  should be multiplied by:

- (a) 10 (b) 20  
(c)  $\frac{4}{5}$  (d)  $\frac{5}{4}$

**RRB Group-D – 05/12/2018 (Shift-II)**

**Ans. (b)** Let the required number be x.  
According to the question,

$$\frac{5}{12} \times x = \frac{25}{3}$$

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

$$x = 20$$

147. The square root of a positive fraction, when added to 1, is  $3\frac{1}{4}$ . Find the fraction.

- (a)  $2\frac{1}{4}$  (b)  $6\frac{1}{4}$   
(c)  $5\frac{1}{16}$  (d)  $3\frac{1}{16}$

**RRB Group-D – 02/11/2018 (Shift-I)**

**Ans. (c)**

Let the fraction be  $= \frac{x}{y}$

According to the question,

$$\sqrt{\frac{x}{y}} + 1 = 3\frac{1}{4}$$

$$\sqrt{\frac{x}{y}} = \frac{13}{4} - 1$$

$$\sqrt{\frac{x}{y}} = \frac{9}{4}$$

$$\frac{x}{y} = \frac{81}{16}, \quad \frac{x}{y} = 5\frac{1}{16}$$

148. The difference between  $\frac{11}{12}$  and  $\frac{7}{8}$  = ?

- (a)  $\frac{1}{4}$  (b)  $\frac{4}{4}$   
(c)  $\frac{4}{24}$  (d)  $\frac{1}{24}$

**RRB Group-D – 11/12/2018 (Shift-III)**

**Ans : (d)** The difference between  $\frac{11}{12}$  and  $\frac{7}{8}$

$$= \frac{11}{12} - \frac{7}{8}$$

$$= \frac{88 - 84}{96}$$

$$= \frac{4}{96}$$

$$= \frac{1}{24}$$

Hence, the required difference is  $\frac{1}{24}$ .

149. What is the fraction which, when subtracted from  $\frac{3}{4}$ , gives  $\frac{2}{5}$ ?

- (a)  $-\frac{1}{1}$  (b)  $\frac{7}{20}$   
(c)  $\frac{1}{20}$  (d)  $\frac{3}{10}$

**RRB Group-D – 08/10/2018 (Shift-III)**

**Ans : (b)** Let the fraction be  $\frac{x}{y}$ .

According to the question,

$$\frac{3}{4} - \frac{x}{y} = \frac{2}{5}$$

$$\Rightarrow \frac{x}{y} = \frac{3}{4} - \frac{2}{5}$$

$$\Rightarrow \frac{x}{y} = \frac{15 - 8}{20}$$

$$\frac{x}{y} = \frac{7}{20}$$

150. What should be added to  $\frac{3}{5}$  to get  $\frac{5}{4}$ ?

- (a)  $\frac{15}{20}$  (b)  $\frac{13}{20}$   
(c)  $\frac{2}{-1}$  (d)  $\frac{1.25}{0.6}$

**RRB Group-D – 05/10/2018 (Shift-III)**

**Ans. (b)** Let the required number be x.

According to the question,

$$\frac{5}{4} = \frac{3}{5} + x$$

$$\frac{5}{4} - \frac{3}{5} = x$$

$$\frac{25 - 12}{20} = x$$

$$x = \frac{13}{20}$$

Hence, the required number is  $\frac{13}{20}$ .

151. When A fraction is subtracted from  $\frac{1}{5}$  gives  $\frac{1}{12}$ . Find the fraction.

- (a)  $\frac{1}{7}$  (b)  $\frac{11}{30}$   
(c)  $\frac{7}{60}$  (d)  $\frac{5}{12}$

**RRB Group-D – 04/10/2018 (Shift-I)**

**Ans. (c)** Let the fraction be  $\frac{x}{y}$ .

According to the question,

$$\frac{1}{5} - \frac{x}{y} = \frac{1}{12}$$

$$\frac{1}{5} - \frac{1}{12} = \frac{x}{y}$$

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$$\frac{12-5}{60} = \frac{x}{y}$$

$$\frac{x}{y} = \frac{7}{60}$$

**152. In which fraction, when 5/16 is added gives 1?**

- (a)  $\frac{11}{32}$  (b)  $\frac{13}{2}$   
(c)  $\frac{22}{32}$  (d)  $\frac{6}{8}$

**RRB Group-D – 19/09/2018 (Shift-I)**

**Ans : (c)** Let the fraction be x.

$$x + \frac{5}{16} = 1, \quad x = 1 - \frac{5}{16}$$

$$x = \frac{11}{16}, \quad x = \frac{2 \times 11}{2 \times 16} = \frac{22}{32}$$

Hence, the require fraction is  $\frac{22}{32}$ .

**153. What is the fraction which, when subtracted from  $\frac{1}{2}$ , gives  $\frac{2}{3}$ ?**

- (a)  $\frac{1}{3}$  (b)  $-\frac{1}{3}$   
(c)  $-\frac{1}{6}$  (d)  $\frac{1}{6}$

**RRB ALP & Tec. (20-08-18 Shift-I)**

**Ans : (c)** Let the fraction be  $\frac{x}{y}$ .

According to the problem,

$$\frac{1}{2} - \frac{x}{y} = \frac{2}{3} \Rightarrow \frac{x}{y} = \frac{1}{2} - \frac{2}{3}$$

$$\frac{x}{y} = \frac{-1}{6}$$

**154. How much should be added to  $\frac{2}{3}$  to obtain  $\frac{3}{2}$ ?**

- (a)  $\frac{4}{9}$  (b)  $\frac{5}{6}$   
(c)  $\frac{1}{-1}$  (d)  $\frac{1.5}{6}$

**RRB ALP & Tec. (17-08-18 Shift-I)**

**Ans : (b)** Let the number to be added is x.

According to the question,

$$\frac{2}{3} + x = \frac{3}{2}$$

$$x = \frac{3}{2} - \frac{2}{3} = \frac{9-4}{6} = \frac{5}{6}$$

**155. A fraction, when subtracted from  $\frac{1}{3}$  gives  $\frac{1}{12}$ .**

The fraction is:

- (a)  $\frac{5}{12}$  (b)  $\frac{1}{4}$

(c)  $\frac{3}{4}$

(d)  $\frac{1}{9}$

**RRB ALP & Tec. (14-08-18 Shift-I)**

**Ans : (b)** Let the fraction be  $\frac{x}{y}$ .

According to the question,

$$\frac{1}{3} - \frac{x}{y} = \frac{1}{12}$$

$$\frac{x}{y} = \frac{1}{3} - \frac{1}{12} = \frac{4-1}{12} = \frac{3}{12} = \frac{1}{4}$$

$$\frac{x}{y} = \frac{1}{4}$$

**156. Which of the fractions given below, when added to  $\frac{5}{8}$ , gives 1?**

- (a)  $\frac{6}{24}$  (b)  $\frac{5}{2}$   
(c)  $\frac{6}{16}$  (d)  $\frac{6}{3}$

**RRB ALP & Tec. (09-08-18 Shift-II)**

**Ans : (c)** Let the fraction be x.

According to the question,

$$\frac{5}{8} + x = 1$$

$$x = 1 - \frac{5}{8} \quad x = \frac{3}{8}$$

$$x = \frac{3 \times 2}{8 \times 2}$$

$$x = \frac{6}{16}$$

Hence the required fraction is  $\frac{6}{16}$ .

## Type - 8

**157. The value of 0.0006697 to three digits of decimal will be:**

- (a) 0.000670 (b) 0.00669  
(c) 0.001 (d) 0

**RRB RPF Constable -22/01/2019 (Shift-I)**

**Ans : (c)** The value of 0.0006697 till three digits of decimal = 0.001,

After decimal if the right digit is 5 or more than 5, then we add 1 to the left digit.

**158. Which fraction is not equal to  $\frac{15}{23}$ ?**

- (a)  $\frac{105}{162}$  (b)  $\frac{75}{115}$   
(c)  $\frac{45}{69}$  (d)  $\frac{30}{46}$

**RRB RPF-SI -12/01/2019 (Shift-I)**

**Ans : (a)** From options—

$$(a) \frac{105}{162} = \frac{35}{54} \quad (b) \frac{75}{115} = \frac{15}{23}$$

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$$(c) \frac{45}{69} = \frac{15}{23} \quad (d) \frac{30}{46} = \frac{15}{23}$$

Hence, it is clear that option (a) is not equal to  $\frac{15}{23}$ .

**159.  $0.065 \times 0.4 = ?$**

- (a) 0.26 (b) 0.026  
(c) 2.6 (d) 0.0026

**RRB RPF-SI -11/01/2019 (Shift-I)**

**Ans : (b)** Given,

$$0.065 \times 0.4 = 0.026$$

**160. Find the value of  $0.1404 \div 0.06 = ?$**

- (a) 0.234 (b) 2.34  
(c) 234 (d) 23.4

**RRB RPF Constable -18/01/2019 (Shift-I)**

**Ans : (b)** Given,

$$0.1404 \div 0.06$$

$$= \frac{0.1404 \times 10000}{0.06 \times 10000} = \frac{1404}{600} = 2.34$$

**161. Find the sum of the place value of 5 and 4 in  $\frac{6}{8}$  and  $\frac{6}{25}$  respectively.**

- (a)  $\frac{8}{100}$  (b)  $\frac{99}{100}$   
(c)  $\frac{9}{100}$  (d)  $\frac{88}{100}$

**RRB Group-D – 28/09/2018 (Shift-III)**

**Ans : (c)**  $\frac{6}{8} = 0.75$

The place value of 5, in  $0.75 = 0.05 = \frac{5}{100}$

and,  $\frac{6}{25} = 0.24$

The place value of 4, in  $0.24 = 0.04 = \frac{4}{100}$

So, the required sum of both values

$$= \frac{5}{100} + \frac{4}{100} = \frac{9}{100}$$

**162. The whole value of 0.008594 to three digits of decimal will be?**

- (a) 0.008 (b) 0.009  
(c) 0.00860 (d) 0.00859

**RRB Group-D – 08/10/2018 (Shift-II)**

**Ans : (b)** As we know :- After decimal if the right digit is 5 or more than 5, then we add 1 to the left digit. Hence, the whole value of 0.008594 to the three digits of decimal will be 0.009.

**163. x and y, given correct to 2 decimal place, are given as 4.51 and 2.48 respectively. What is the upper limit of the value of x + y? (The value is correct to the two digits of decimal.)**

- (a) 7.000 (b) 6.995  
(c) 7.010 (d) 6.990

**RRB Group-D – 12/10/2018 (Shift-III)**

**Ans : (a)**  $x + y = 4.51 + 2.48 = 6.99$

Hence, the nearest upper limit for the value of (x + y) that is  $6.99 = 7.000$ .

**164. Find the value of x.**

$$\frac{144}{0.144} = \frac{14.4}{x}$$

- (a) 0.0001 (b) 0.0144  
(c) 0.1 (d) 0.01

**RRB Group-D – 16/10/2018 (Shift-I)**

**Ans. (b) :** Given expression,

$$\frac{144}{0.144} = \frac{14.4}{x}$$

$$144 \times x = 14.4 \times 0.144$$

$$x = \frac{14.4 \times 0.144}{144}$$

$$x = \frac{144 \times 0.144}{144 \times 10}$$

$$x = 0.0144$$

**165. If x is integer 0.80000, then what is interval of x?**

- (a)  $0.79995 < x \leq 0.80005$   
(b)  $0.799905 \leq x < 0.800005$   
(c)  $0.799995 \leq x < 0.800005$   
(d)  $0.79995 \leq x < 0.80005$

**RRB Group-D – 30/10/2018 (Shift-I)**

**Ans : (c)**

The required interval of x =  $0.799995 \leq x < 0.800005$

**166. If  $\frac{0.7}{1-6c} = -0.2$ , then c = ?**

- (a) 0.8 (b) 0.5  
(c) 0.75 (d) 0.075

**RRB Group-D – 20/09/2018 (Shift-I)**

**Ans. (c) :** Given,

$$\frac{0.7}{1-6c} = -0.2$$

$$-0.2 + 1.2c = 0.7$$

$$1.2c = 0.9$$

$$c = \frac{0.9}{1.2}$$

$$c = 0.75$$

**167. x is written as 15.84, to two digits of decimal. Which of the following is true?**

- (a)  $15.835 < x \leq 15.845$   
(b)  $15.835 < x < 15.845$   
(c)  $15.835 \leq x \leq 15.845$   
(d)  $15.835 \leq x < 15.845$

**RRB Group-D – 09/10/2018 (Shift-I)**

**Ans. (d) :** Analyzing option (d),

15.835 is less than x, and 15.835 is written to two digits of decimal as 15.84 (approx). While 15.845 will be definitely greater.

**168. If x is 0.70000, to five digits of decimal, then interval of x will be:**

- (a)  $0.6995 \leq x < 0.70005$   
(b)  $0.699995 \leq x < 0.700005$   
(c)  $0.699905 \leq x < 0.700005$   
(d)  $0.69995 < x \leq 0.70005$

**RRB Group-D – 10/10/2018 (Shift-III)**

**Ans : (b)** If x is 0.70000, to five digits of decimal,

Then,  $0.699995 \leq x < 0.700005$  is correct.



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169. The least value of  $x$  which makes  $\frac{65}{x-14}$  an integer, is:
- (a) 1 (b) -51  
(c) 79 (d) -1

**RRB Group-D – 26/10/2018 (Shift-III)**

**Ans : (b)** From question,  
Putting the value of options in the place of  $x$ .

(a)  $\frac{65}{1-14} = \frac{65}{-13} = -5$  (Integer)

(b)  $\frac{65}{-51-14} = \frac{65}{-65} = -1$  is also an integer for which the value of  $x$  is the least.

(c)  $\frac{65}{79-14} = \frac{65}{65} = 1$  (Integer)

(d)  $\frac{65}{-1-14} = \frac{65}{-15} = -4.33$  (Non-Integer)

Hence, it is clear that the least required value of  $x$  is -51

170. The product of  $\frac{144}{100}$  and  $\frac{175}{216}$  will be = ?

- (a)  $\frac{7}{12}$  (b)  $\frac{14}{3}$   
(c)  $\frac{7}{6}$  (d)  $\frac{7}{3}$

**RRB Group 'D' 07/12/2018 (Shift-I)**

**Ans : (c)**  $\frac{144}{100} \times \frac{175}{216}$   
 $= \frac{7}{6}$

171.  $x$  and  $y$ , are given correct to the two digits of decimal, are written as 3.57 and 3.42 respectively. What is the upper limit for  $x + y$  ?
- (a) 7.000 (b) 7.010  
(c) 6.990 (d) 6.995

**RRB Group-D – 23/10/2018 (Shift-I)**

**Ans. (a) :** According to the question,  
 $x$  and  $y$  are correct to the two digits of decimal.  
 $x = 3.57$  and  $y = 3.42$ ,  
then,  $x + y = 3.57 + 3.42 = 6.99$   
hence, the upper limit of  $x + y = 7.000$

172.  $x$  and  $y$ , are given correct to the two digits of decimal, are written as 2.51 and 3.50 respectively. What is the lower limit for  $x + y$  ?
- (a) 6.010 (b) 5.995  
(c) 6.000 (d) 5.990

**RRB Group-D – 15/10/2018 (Shift-II)**

**Ans : (c)** According to the question,  
 $x = 2.51$  and  $y = 3.50$   
then,  
 $x + y = 2.51 + 3.50 = 6.01$   
So the lower limit for  $x + y$  is 6.000

173. Find the value of  $x$ .

$$\frac{484}{4.84} = \frac{48.4}{x}$$

- (a) 0.484 (b) 0.00484  
(c) 0.0484 (d) 4.84

**RRB Group-D – 08/10/2018 (Shift-III)**

**Ans : (a)**  $\frac{484}{4.84} = \frac{48.4}{x}$

$$\Rightarrow x \times 484 = 48.4 \times 4.84$$

$$\Rightarrow x = \frac{484 \times 484}{484 \times 1000}$$

$$\text{Hence, } x = 0.484$$

174.  $x$  and  $y$ , are given correct to the one digit of decimal, and written as 6.2 and 1.3 respectively. What is the upper limit of  $\frac{x}{y}$  ?

- (a) 4.96 (b) 5  
(c) 4.77 (d) 5.05

**RRB Group-D – 04/10/2018 (Shift-I)**

**Ans. (b)**  $\frac{x}{y} = \frac{6.2}{1.3} = 4.76$

Hence, the value of upper limit of  $\frac{x}{y}$  is 5.

175.  $1.008 = ?$

- (a)  $1\frac{1}{125}$  (b)  $1\frac{3}{25}$   
(c)  $1\frac{2}{25}$  (d)  $1\frac{2}{125}$

**RRB Group-D – 01/10/2018 (Shift-II)**

**Ans. (a) :**  $1.008 = ?$

$$\Rightarrow \frac{1008}{1000} = \frac{504}{500} = \frac{252}{250} = \frac{126}{125} = 1\frac{1}{125}$$

Hence, the value of 1.008 is  $1\frac{1}{125}$ .

176. If  $X = \frac{63.5535}{13.05}$ , find the value of  $X$ .

- (a) 4.48 (b) 4.87  
(c) 4.46 (d) 4.28

**RRB Group-D – 23/09/2018 (Shift-II)**

**Ans : (b)**  $X = \frac{63.5535}{13.05}$   
 $X = \frac{6355.35}{1305} = 4.87$

Hence, the value of  $X$  is 4.87

177. If  $\frac{2334}{33.1} = 261$ , then  $\frac{23.34}{3.31} = ?$

- (a) 0.261 (b) 2.61  
(c) 26.1 (d) 261

**RRB NTPC 18.04.2016 Shift : 3**

**Ans : (c)** Given,

$$\frac{2334}{33.1} = 261 \dots\dots (1)$$

$$\therefore \frac{23.34}{3.31} = \frac{2334}{331}$$

$$= \frac{2334}{33.1 \times 10}$$

$$= \frac{2334}{33.1} \times \frac{1}{10}$$

$$= \frac{261}{10}$$

$$= 26.1$$

{from equation (1)}