CLASS-10th REVISION (CH: – 1 REAL NUMBERS)

Objective Questions

-:Multiple Choice Questions :-

1). The decimal form of a rational number $\frac{p}{q}$ is terminating if the factor of q will be of the form …….. .

(a) 2^m5^n (b) 2^m3^n (c) 2^m7^n (d) 2^m4^n

Ans. (a) 2^m5^n or 2^n5^m

2.) Decimal expansion of rational number $\frac{17}{8}$ will be :

(a) Terminating (b) Non-terminating (c) Co prime (d) Prime

Ans. (a) Terminating.

Hint :- $\left[\frac{17}{8} = \frac{17}{2\times2\times2} = \frac{17}{2^3}\right]$

Explanation :- [Here, $q = 8 = 2\times2\times2 = 2^3$ is of the form of $2^3, 5^0$ (or) 2^m5^n, Hence $\frac{17}{8}$ represents terminating decimals.]

3.) Decimal representation of rational number $\frac{17}{8}$ will be :

(a) 2.125 (b) 3.125 (c) 1.125 (d) 2.25

Ans. (a) 2.125

Hint :- $\frac{17}{8} = 2.125$ (or) $\frac{17}{8} = \frac{17}{2\times2\times2} = \frac{17\times5^3}{2^3\times5^3} = \frac{2125}{10^3} = \frac{2125}{100} = 2.125$

4.) The decimal expansion of rational number $\frac{17}{8}$ will terminate after how many places of decimals ?

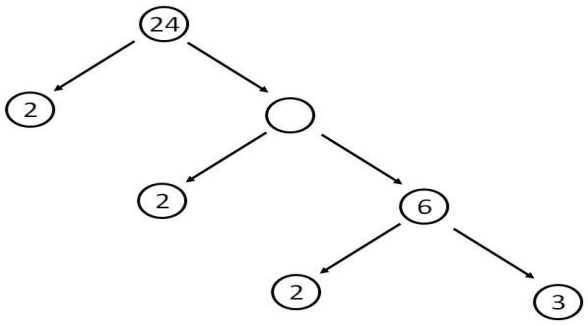
(a) 1 (b) 3 (c) 2 (d) 4

Ans. (b) 3 (Three decimal place)

Hint :- $\frac{17}{8} = 2.125$ (Three decimal place) (or)

$\frac{17}{8} = \frac{17}{2\times2\times2} = \frac{17\times5^3}{2^3\times5^3} = \frac{2125}{10^3} = \frac{2125}{100} = 2.125$ (3 decimal place)

5.) Find the missing number in the following prime factorization tree :



(a) 12 (b) 48

(c) 3 (d) 6

Ans. (a) 12

6.) Which of the following rational numbers will have a terminating decimal expansion ?

(a) $\frac{17}{8}$ (b) $\frac{7}{105}$ (c) $\frac{9}{14}$ (d) $\frac{13}{30}$

Ans. (a) $\frac{17}{8}$

Hint :- $\left[\frac{17}{8} = \frac{17}{2\times2\times2} = \frac{17}{2^3}\right]$ Here, $8 = 2 \times 2 \times 2 = 2^3$ can be expressed as $2^3 5^0 (or)\ 2^m 5^n$. Hence, $\frac{17}{8}$ represents terminating decimal expansion .

7.) Decimal representation of $\frac{23}{2^3\times5^2}$ will be ?

(a) Terminating (b) Non-terminating (c) Co prime (d) Prime

Ans. (a) Terminating.

Hint :- (Because, q is of the form of $2^3 5^2\ (or)\ 2^m 5^n$. Hence, $\frac{23}{2^3\times5^2}$ represents terminating decimal expansion.)

8.) Decimal representation of $\frac{6}{15}$ will be ?

(a) Terminating (b) Non-terminating (c) Co prime (d) Prime

Ans. (a) Terminating.

Hint :- $\frac{6}{15}$ has a denominator of 15, But the fraction must be in simplest Form, $\therefore \frac{\cancel{6}^2}{\cancel{15}_5} = \frac{2}{5}$, Hence q is of the form of $2^n 5^m$, where n, m are Non-negative integers. Then x has a terminating decimal expansion.

9.) The decimal expansion of the rational number $\frac{23}{2^2 \times 5}$ will terminate after ?

(a) One decimal place (b) Two decimal place

(c) More than three decimal place (d) Three decimal place

Ans. (b) Two decimal place

Hint :- $\left(\frac{23}{2^2 \times 5} = \frac{23\times5}{2^2\times5^2} = \frac{115}{10^2} = \frac{115}{100}\right) = 1.15 =$ Two decimal place

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10.) $\sqrt{3}$ is :

(a) a rational no. (b) an irrational no. (c) an integer (d) none of these.

Ans. (b) an irrational no.

11.) $5-3\sqrt{3}$ is :

(a) a rational no. (b) an irrational no. (c) an integer (d) none of these.

Ans. (b) an irrational no. ($\sqrt{3}$, is an irrational number $\therefore 5-3\sqrt{3}$ is also)

12.) $\sqrt{2}$ is :

(a) a rational no. (b) an irrational no. (c) an integer (d) none of these.

Ans. (b) an irrational no.

13.) $6-\sqrt{2}$ is :

(a) a rational no. (b) an irrational no. (c) an integer (d) none of these.

Ans. (b) an irrational no. ($\sqrt{2}$, is an irrational number $\therefore 6-\sqrt{2}$ is also)

14.) $\sqrt{25}$ is :

(a) a rational no. (b) an irrational no. (c) an integer (d) none of these.

Ans. (a) a rational number.

Hint :- $\left[\sqrt{25}=5=\frac{5}{1}\right]$

Explanation :- (a rational number can be expressed in the form of $\frac{p}{q}$ where P and q are two integers and q not equal to zero.)

15.) 43.123456789 is a ……. Number.

(a) a rational no. (b) an irrational no. (c) none of these.

Ans. (a) a rational no.

16.) $0.12012001200012000 0$ … … …. is a ?

(a) Irrational no. (b) Rational no. (c) none of these.

Ans. (a) Irrational.

17.) $43.\overline{123456789}$ is a ……. Number.

(a) a rational no. (b) an irrational no. (c) none of these.

Ans. (a) a rational no.

18.) $3.\overline{12}$ is

(a) a rational no. (b) an irrational no. (c) an integer (d) none of these.

Ans. (a) a rational number.

19.) π is a/an …….. number.

(a) Irrational (b) Rational (c) an integer

Ans. (a) Irrational number

Explanation : ($\pi = 3.141592\ldots$, Which is non-terminating and non-repeating decimal expansion) Therefore π is an irrational number.

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20). Which of the following is an irrational number be :

(a) $\sqrt{3}$ (b) $\sqrt{9}$ (c) $\sqrt{25}$ (d) $\sqrt{16}$

Ans. (a) $\sqrt{3}$

21.) Which of the following is a rational number be :

(a) $\sqrt{4}$ (b) $\sqrt{3}$ (c) $\sqrt{5}$ (d) $\sqrt{2}$

Ans. (a) $\sqrt{4}$

Hint :- ($\sqrt{4} = 2$, here 2 can be expressed in the form of $\frac{p}{q} = \frac{2}{1}$ where P and q are two integers and q not equal to zero.)

22.) A prime number has only …….. factors.

(a) 2 (b) 1 (c) 3 (d) 4

Ans. (a) 2 (1 and number itself)

23.) 196 Can be expressed as a product of its prime factor as

(a) $2 \times 7 \times 14$ (b) $2 \times 2 \times 49$ (c) $2^2 \times 7^2$

Ans. (c) $2^2 \times 7^2$ (Hint :- Prime factor of $196 = 2 \times 2 \times 7 \times 7 = 2^2 \times 7^2$)

24.) The exponent of 2 in the prime factor of 140

(a) 4 (b) 3 (c) 2 (d) 12

Ans. (c) 2

Hint :- ($140 = 2 \times 2 \times 5 \times 7 = 2^2 \times 5 \times 7$) Here, exponent of 2 is 2.

25.) Factors of 24 are :

(a) $2^3 \times 3$ (b) $2^3 \times 3^2$ (c) 2×3^2 (d)$2^2 \times 3$

Ans. (a) $2^3 \times 3$ (Hint :- Prime factor of $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$)

26.) 5 is the prime factor of ?

(a) 72 (b) 200 (c) 101 (d) 16

Ans. (b) 200

Hint :- (5 is the prime factor of that number, which ends with 0 or 5. Here there is only 200 which end with 0)

27.) Two positive integer numbers, whose $\text{HCF} = 1$ are known as …… numbers.

(a) Co prime (b) Non-terminating (c) Terminating (d)Prime

Ans. (a) Co prime.

Hint :- (Co-prime numbers are those numbers, Which do not have any common factor other than 1. e.g, 4 and 9 are co-prime numbers.)

28.) The pair of co-prime is :

(a) 9, 25 (b) 9, 21 (c) 32, 40 (d) 9, 1

Ans. (a) 9, 25

Hint :- (Co-prime numbers are those numbers, Which do not have any common factor other than 1.)

9 and 25 have no common factor $\Rightarrow 9 = 3 \times 3,\ 25 = 5 \times 5$

$\therefore$ Correct answer is (a) 9, 25

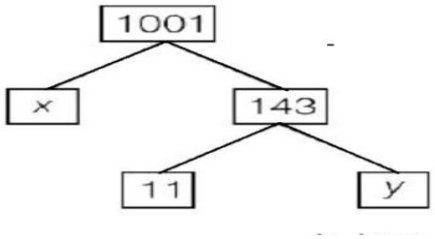
29.) Find the value of x and y in given figure :

(a) $x = 13,\ y = 7$

(b) $x = 7,\ \ y = 13$

(c) $x = 9,\ \ y = 12$

(d) $x = 12,\ y = 9$



Ans. (b) $x = 7,\ \ y = 13$

30.) If a and b are two prime numbers, then their HCF is …….. .

(a) 1 (b) 2 (c) 3 (d) 4

Ans. (a) 1

Hint :- (Hence, any two different prime numbers will have the highest common factor as '1'. therefore the HCF of given two prime numbers a and b is 1.) HCF of two primes is always 1.

$\therefore$ Correct answer is (a) 1

31.) The H.C.F of two expressions P and Q is 1, then their L.C.M is :

(a) $p \times q$ (b) $p \pm q$ (c) $p + q$ (d) $p - q$

Ans. (a) $p \times q$

Hint :- Here, HCF of p and $q = 1$

$$\text{HCF}\ (p, q) \times \text{LCM}\ (p, q) = p \times q$$

$$1 \times \text{LCM} = p \times q$$

$$\text{LCM} = p \times q$$

32.) Euclid's division lemma states that for two positive integers a and b, there exist unique integers q and r such that $a = bq + r$ where r must satisfy

(a) $0 \leq r < b$ (b) $0 < r \leq b$ (c) $1 < r < b$

Ans. (a) $0 \leq r < b$

33.) What is HCF of 26 and 91 will be ?

(a) 13 (b) 16 (c) 26 (d) 9

Ans. (a) 13.

Hint :- Prime factor of $26 = 2 \times 13$ and $91 = 7 \times 13$,

$\therefore$ common factor of 26 and 91 $= 13$

Hence HCF of 26 and 91 $= 13$. $\therefore$ Correct answer is (a) 13

34.) The HCF of 8, 9 and 25 is

(a) 4 (b) 1 (c) 2 (d) 9

Ans. (b) 1

Hint :- (Prime factor of $8 = 2 \times 2 \times 2, 9 = 3 \times 3$ and $25 = 5 \times 5$,

No common factor of 8, 9 and 25 so, HCF of 8, 9 and 25 $= 1$

35.) HCF of $a = 2 \times 3^2 \times 5$, $b = 2^2 \times 3 \times 5^2$, $c = 2^2 \times 3 \times 5^2$ is :

(a) 900 (b) $2 \times 3 \times 5$ (c) 60 (d) $2^2 \times 3 \times 5^2$

Ans. (b) $2 \times 3 \times 5$

36.) LCM of $a = 2 \times 3 \times 5$, $b = 2^2 \times 3^2 \times 5$, $c = 2 \times 3 \times 5^2$ is :

(a) $2 \times 3 \times 5$ (b) 900 (c) 30 (d) $2^2 \times 3^2 \times 5$

Ans. (b) 900

Hint :- Here, $a = 2 \times 3 \times 5$, $b = 2^2 \times 3^2 \times 5$, $c = 2 \times 3 \times 5^2$

Explanation :- LCM is the product of the greatest power of each prime factor, involve in numbers.

$\therefore$ LCM $= 2^2 \times 3^2 \times 5^2 = 4 \times 9 \times 25 = 900$. Correct answer is (b) 900

37.) The sum of two consecutive odd numbers is always divisible by

(a) 2 (b) 3 (c) 4 (d) 5

Ans. (c) 4

Explanation :- ($3 + 5 = 8$, which is divisible by 4 and

$15 + 17 = 32$, which is divisible by 4)

38.) The product of two consecutive natural numbers is always …….

(a) Even number (b) Prime number (c) Odd number

Ans. (a) Even number.

39.) The sum or difference of a rational number and an irrational number is :

(a) Irrational (b) Rational (c) None of these

Ans. (a) Irrational.

40.) The product and quotient of a non- zero rational number and an irrational number is :

(a) Irrational (b) Rational (c) None of these

Ans. (a) Irrational.

41.) 2π is a/an ..... number.

(a) Irrational (b) Rational (c) None of these

Ans. (a) Irrational.

Explanation :- The product and quotient of a non- zero rational number and an irrational number is irrational.

(π is an irrational number. $2 \times \pi = 2\pi, \therefore 2\pi$ is an irrational no.)

42.) If any number is divided by 5, then which cannot be the remainder ?

(a) 0 (b) 1 (c) 2 (d) 5

Ans. (c) 5

Hint (If any number is divided by 5, the remainder is always less than 5.)

43.) Which of the following is a prime number ?

(a) 20 (b) 8 (c) 23 (d) 10

Ans. (c) 23

Hint :- (Prime numbers are those numbers, which have no factor other than 1 and the number itself.)

44.) If the product of two numbers is 120 and their LCM is 40. The HCF of the numbers is ?

(a) 4 (b) 1 (c) 2 (d) 3

Ans. (d) 3

Hint :- ($\text{HCF}\ (a, b) \times \text{LCM}\ (a, b) = a \times b$)

$$\left(\text{HCF} = \frac{\text{product of numbers}}{\text{LCM}} = \frac{120}{40} = 3\right)$$

45.) The product of two numbers is 120 and their HCF is 40. The LCM of the numbers is ?

(a) 4 (b) 1 (c) 2 (d) 3

Ans. (d) 3

Hint :- $\text{LCM} = \frac{\text{product of numbers}}{\text{HCF}} = \frac{120}{40} = 3$

46.) The HCF of 12, 15 and 21 is :

(a) 4 (b) 3 (c) 2 (d) 12

Ans. (b) 3

Hint :- Prime factor of $12 = 2 \times 2 \times 3, 15 = 3 \times 5$ and $21 = 3 \times 7$

Common factor of 12, 15 and 21 is 3, $\therefore$ HCF of 12, 15 and $21 = 3$

47.) If H.C.F of $(26,\ 91) = 13$, then LCM of $(26,\ 91) = ?$

(a) 13 (b) 2366 (c) 2 (d) 182

Ans. (d) 182

Hint :- $\text{LCM} = \frac{\text{product of numbers}}{\text{HCF}} = \frac{26 \times 91}{13} = \frac{2_{\cancel{26}} \times 91}{\cancel{13}_1} = 2 \times 91 = 182$

48.) Express 0.03 as a fraction in simplest form :

(a) $\frac{3}{100}$ (b) $\frac{3}{10}$ (c) $\frac{3}{1000}$ (d) None of these

Ans. (a) $\frac{3}{100}$

49.) Express $0.\overline{0001}$ as a fraction in simplest form :

(a) $\frac{1}{999}$ (b) $\frac{1}{990}$ (c) $\frac{1}{1000}$ (d) None of these

Ans. (a) $\frac{1}{999}$

50.) HCF of 96 and 404 is ?

(a) 4 (b) 101 (c) 96 (d) 16

Ans. (a) 4. Hint :- (Here, $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3,\ 404 = 2 \times 2 \times 101$

$\therefore$ Common factor of 96 and 404 is $2 \times 2 = 4$ so, HCF of 96 and $404 = 4$

51.) Which of the following rational numbers will have a terminating decimal expansion ?

(a) $\frac{17}{8}$ (b) $\frac{7}{6}$ (c) $\frac{9}{7}$ (d) $\frac{11}{13}$

Ans. (a) $\frac{17}{8}$ (Explanation :- If $x = \frac{p}{q}$ be a rational number, such that the prime factorization of q is of the form of $2^n 5^m$, where n, m are non-negative integers. Then x has a terminating decimal expansion.

Here, $8 = 2 \times 2 \times 2 = 2^3, 5^0$ *or* $2^n 5^m$,

(Hence, $\frac{17}{8}$ represents terminating decimal.)

52.) H.C.F of 64 and 96 is :

(a) 32 (b) 64 (c) 4 (d) 96

Ans. (a) 32

Hint :- Here, $64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$ and $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

$\therefore$ Common factor of 32 and 96 is $2^5 = 32$. So, HCF of 64 and 96 $= 32$

53.) Which of the following rational numbers will have a terminating decimal expansion ?

(a) $\frac{73}{1850}$ (b) $\frac{96}{2^3 \times 5^4}$ (c) $\frac{35}{42}$ (d) $\frac{129}{2^3 \times 5^7 \times 7^5}$

Ans. (b) $\frac{96}{2^3 \times 5^4}$ (Because, q is of the form of $2^m 5^n$)

54.) $3.\overline{17}$ is a

(a) a rational number (b) an irrational number

(c) an integer. (d) none of these.

Ans. (a) a rational number.

Hint :- [Since, rational number represent terminating or non- terminating repeating decimal.]

55.) What is the L.C.M of 6 and 20 ?

(a) 2 (b) 60 (c) 120 (d) 90

Ans. (b) 60

Hint :- Here, $6 = 2 \times 3$ and $20 = 2 \times 2 \times 5$

Explanation :- LCM is the product of the greatest power of each prime factor, involve in numbers.

Therefore L.C.M of 6 and 20 $= 2 \times 2 \times 3 \times 5 = 2^2 \times 3 \times 5 = 60$

$\therefore$ Correct answer is (b) 60

56.) Express 140 as a product of its prime :

(a) $2^2 \times 5 \times 7$ (b) $2^2 \times 35$ (c) $2^2 \times 35$ (d) 10×14

Ans. (a) $2^2 \times 5 \times 7$

Hint :- $(140 = 2 \times 2 \times 5 \times 7 = 2^2 \times 5 \times 7)$ $\therefore$ Correct answer is (a)

57.) $2\sqrt{5} \times 3\sqrt{5}$ is a :

(a) a rational no. (b) an irrational no.

(c) an integer (d) none of these.

Ans. (a) a rational number

58.) Without doing the long division check whether the rational number $\frac{13}{3125}$ will have a ..... decimal expansion.

(a) Terminating (b) Non-terminating (c) Co prime (d) Prime

Ans. (a) Terminating.

Hint :- $\left[\frac{13}{3125} = \frac{13}{5\times5\times5\times5\times5} = \frac{13}{5^5}\right]$ Because, prime factor of q(3125) is of the form of $2^0 5^5\ (or)\ 2^m 5^n$. Hence, $\frac{13}{3125}$ represents terminating decimal expansion.)

59.) If the L.C.M of $(a,\ 91)$ is 182 and H.C.F of $(a,\ 91) = 13$, then $(a) = ?$

(a) 13 (b) 91 (c) 182 (d) 26

Ans. (d) 26

Solution :- $(\text{HCF}\ (a,b) \times\ \text{LCM}\ (a,b) =\ a \times b)$

$$\frac{\text{HCF}\ (a,b)\times \text{LCM}\ (a,b)}{b} = a$$

$$a = \frac{13\times182}{91} = \frac{13\times\cancel{182}^{2}}{\cancel{91}_{1}} = 13 \times 2 = 26$$

60.) If the H.C.F and LCM of two numbers is, 2 and 60 and one number is 6 the other number is ?

(a) 30 (b) 120 (c) 20 (d) 240

Ans. (c) 20

Hint :- $(\text{HCF}\ (a,b) \times\ \text{LCM}\ (a,b) =\ a \times b)$

$$\frac{\text{HCF}\ (a,b)\times \text{LCM}\ (a,b)}{a} = b$$

$$b = \frac{2\times60}{6} = \frac{2\times\cancel{60}^{10}}{\cancel{6}_{1}} = 2 \times 10 = 20$$

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61. If two positive integers a and b are written as $a = x^5y^2$ and $b = x^3y^3$; a, b are prime numbers, then HCF (a, b) is :

(a) x^2y^3 (b) x^2y (c) x^3y^2 (d) x^2y^3

Ans. (c) x^3y^2

Hint :- (We have, $a = x^5y^2 = x\times x\times x\times x\times x\times y\times y$ and

$b = x^3y^3 = x\times x\times x\times y\times y\times y$)

common factor of $a = x^5y^2$ and $b = x^3y^3$ is $x\times x\times x\times y\times y$

$\therefore$ HCF $a = x^5y^2$ and $b = x^3y^3$ is x^3y^2

62.) $\sqrt{7}$ is :

(a) a rational no. (b) an irrational no. (c) an integer

(d) none of these.

Ans. (b) an irrational no.

63.) $\frac{13}{125}$ is a Terminating Decimal.

(a) yes (b) No

(c) May be or may not be (d) Non of these

Ans. (a) Yes.

Hint :- (Here, q $= 125 = 5 \times 5 \times 5 = 5^3$ is of the form of $2^0 5^3 (or)\ 2^m 5^n$.

64.) Which of the following rational numbers is not a terminating decimal ?

(a) $\frac{17}{8}$ (b) $\frac{6}{15}$ (c) $\frac{14}{70}$ (d) $\frac{79}{210}$

Ans. (d) $\frac{79}{210}$ Hint :- $\left[\frac{79}{210} = \frac{79}{2\times3\times5\times7}\right]$

Explanation :- (Here, q $= 210 = 2 \times 3 \times 5 \times 7$ is not of the form of $2^m 5^n$)

65.) Which of the following is a common multiple of 6 and 12 ?

(a) 42 (b) 30 (c) 60 (d) 18

Ans. (c) 60

Hint :- (Multiple of 6 $=$ 6, 12, 18, 24, 30, 36, 42, 48, 54, 60 and
Multiple of 12 $=$ 12, 24, 36, 48, 60)
Common multiple of 6 and 12 $=$ 60 $\therefore$ correct answer is (c) 60.

66.) Which of the following is not a common multiple of 6 and 12 ?

(a) 24 (b) 48 (c) 60 (d) 18

Ans. (d) 18

Hint :- (Multiple of 6 $=$ 6, 12, 18, 24, 30, 36, 42, 48, 54, 60 and
Multiple of 12 $=$ 12, 24, 36, 48, 60)
Common multiple of 6 and 12 $=$ 12, 24, 36, 48, 60
But 18, is not a common multiple of 6 and 12
$\therefore$ correct answer is (d) 18.

67.) The product of non- zero rational and an irrational number is :

(a) Irrational (b) Rational (c) None of these

Ans. (a) Irrational.

68.) The sum of a rational number and irrational number is :

(a) Irrational (b) Rational (c) None of these

Ans. (a) Irrational.

69.) The product of two different rational number is always :

(a) Irrational (b) Rational (c) None of these

Ans. (b) Rational

70.) The difference of a rational number and an irrational number is :

(a) Irrational (b) Rational (c) None of these

Ans. (a) Irrational.

71.) Is it possible to have two numbers whose HCF is 4 and LCM is 9696 ?

(a) yes (b) No

(c) May be or may not be (d) NonE of these

Ans. (a) Yes.

Hint :- [HCF always divides LCM completely] $= \frac{9696}{4} = 2424$

72.) Is it possible to have two numbers whose HCF is 2 and LCM is 15 ?

(a) yes (b) No (c) May be or may not be

(d) Non of these

Ans. (b) No

Explanation :- [HCF always divides LCM completely]

73.) $7 \times 11 \times 13 + 13$ is :

(a) prime number (b) an irrational number

(c) composite number (d) none of these.

Ans. (c) composite number

Hint: [We have, $7 \times 11 \times 13 + 13 = 13(7 \times 11 + 1)$

Hence, given number is divisible by 13 except 1 and itself. Therefore, it is a composite number.]

74.) If a and b are two prime numbers, then their HCF is …….. ·

(a) 1 (b) 2 (c) 3 (d) 4

Ans. (a) 1

Hint: [Since, a and b two prime numbers then there is no common factors except 1.] $\therefore$ HCF $(a, b) = 1$

75.) The sum of the exponents of prime factors in the prime factorisation 140, is :

(a) 1 (b) 2 (c) 3 (d) 4

Ans. (d) 4

Hint :- We have, $140 = 2 \times 2 \times 5 \times 7 = 2^2 \times 5^1 \times 7^1$

$\therefore$ sum of the exponents $= 2+1+1 = 4$

76.) If $a = 2 \times 3^2 \times 5^3$ and $b = 2^2 \times 5^2 \times 7$, then LCM (a, b) is :

(a) $2^2 \times 3^2 \times 5^3 \times 7$ (b) $2 \times 3 \times 5 \times 7$

(c) 30 (d) $2^2 \times 3 \times 5^2$

Ans. (a) $2^2 \times 3^2 \times 5^3 \times 7$

77.) $\frac{6-\sqrt{2}}{5}$ is an ..... number, it is being given that $\sqrt{2}$ is an irrational number.

(a) a rational no. (b) an irrational no.

(c) an integer (d) none of these.

Ans. (b) an irrational

Hint: [Since, $\sqrt{2}$ is an irrational number. $\therefore 6 - \sqrt{2}$ is also an irrational no.

Therefore, $\frac{6-\sqrt{2}}{5}$ is also an irrational number.] The difference of a rational number and an irrational number is always irrational)

78.) If a and b are two prime numbers, then find LCM (a, b).

(a) ab (b) $a + b$ (c) $a - b$ (d) $\frac{a}{b}$

Ans. (a) ab

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79. If a^2b^2c and a^2bc^2 are two prime numbers, then, HCF of (a^2b^2c, a^2bc^2) is :

(a) a^2bc (b) $a^2b^2c^2$ (c) a^2bc^2 (d) abc

Ans. (a) a^2bc

80.) After how many places of decimals will be the decimal expansion of rational number $\frac{23}{2^3 5^2}$ terminate ?

(a) 1 decimal place (b) 3 decimal places

(c) 2 decimal places (d) none of these

Ans. (b) 3 decimal places.

Hint :- $\left(\frac{23}{2^3 \times 5^2} = \frac{23\times5}{2^3\times5^3} = \frac{115}{10^3} = \frac{115}{1000}\right) = 0.115 = 3$ decimal place

---

81.) HCF of $2 \times 3^2 \times 5^2$ and $2^2 \times 3 \times 5^3$?

(a) $2^2 3^2 5^2$ (b) $2 \times 3 \times 5$

(c) $2 \times 3 \times 5^2$ (d) $2 \times 3^2 \times 5^2$

Ans. (c) $2 \times 3 \times 5^2$

82.) If l and m are two prime numbers, then find LCM (l, m).

(a) lm (b) $l + m$ (c) $l - m$ (d) $\frac{l}{m}$

Ans. (a) lm

83.) What is the HCF of 2×3^2 and $2^2 \times 3$?

(a) 9 (b) 2 (c) 3 (d) 6

Ans. (d) 6

Hint :- Here, $2 \times 3^2 = 2 \times 3 \times 3$ and $2^2 \times 3 = 2 \times 2 \times 3$

Explanation :- HCF is the product of the smallest power of each common prime factor in numbers.

Therefore HCF of 2×3^2 and $2^2 \times 3 = 2 \times 3 = 6$ ∴ Correct answer is (d)

84.) What is the LCM of 2×3^2 and $2^2 \times 3$?

(a) 6 (b) $2^2 \times 3^2$ (c) 18 (d) 54

Ans. (b) $2^2 \times 3^2$

Hint :- Here, $2 \times 3^2 = 2 \times 3 \times 3$ and $2^2 \times 3 = 2 \times 2 \times 3$

Explanation :- LCM is the product of the greatest power of each prime factor, involve in numbers.

Therefore LCM of 2×3^2 and $2^2 \times 3 = 2^2 \times 3^2$ ∴ Correct answer is (b)

85.) Which of the following is an irrational number be :

(a) $0.12012001200012000 0 \ldots \ldots \ldots$ (b) $43.\overline{123456789}$

(c) $3.\overline{17}$ (d) $\frac{17}{8}$

Ans. (a) $0.12012001200012000 0 \ldots \ldots \ldots$

86.) The exponents of 5 in the prime factorisation of 140, is :

(a) 1 (b) 2 (c) 3 (d) 4

Ans. (a) 1

Hint: [We have, $140 = 2 \times 2 \times 5 \times 7 \Rightarrow 2^2 \times 5^1 \times 7^1$]

87.) If HCF of two numbers is 1, the numbers are called relatively …… and ……. .

(a) Prime, co-prime (b) Composite, co-prime

(c) Composite, Prime (d) Both (a) and (b)

Ans. (a) Prime, co-prime

Hint: [Prime numbers are those numbers, which have no factor other than 1 and the number itself. Co prime numbers are those numbers, Which have at least 1 factor other than 1 and the number itself]

88.) For any two positive integers a and b, there exist unique integers q and r such that $a = bq + r, 0 \leq r < b$. If $b = 4$ then which is not the value of r ?

(a) 1 (b) 2 (c) 3 (d) 4

Ans. (d) 4 Hint: [Given $a = bq + r, 0 \leq r < b$ and $b = 4$]

89.) $10^2 - 6^2$ is :

(a) prime number (b) an irrational number

(c) composite number (d) none of these.

Ans. (c) composite number

Hint: [We have, $10^2 - 6^2 = (10 + 6)(10 - 6) = 16 \times 4 = 64$]

Hence, $10^2 - 6^2$ is a composite number,

Explanation :- (A composite number has more than two factors itself and 1. since 64 has more than two factors i.e. 1, 2, 4, 8, 16, 32, 64.)

90.) If $a = bq + r$, then least value of r is :

(a) 0 (b) 2 (c) 3 (d) 4

Ans. (a) 0

91.) What is the HCF of the smallest composite number and the smallest even number ?

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

Ans. (d) 2

Hint: [Smallest composite number $= 4 = 2 \times 2$ and

Smallest even number $= 2 = 2 \times 1$]

common factor of 4 and $2 = 2$, $\therefore$ HCF of 4 and $2 = 2$

92.) Which of the following is true about the prime factors of the denominator of the decimal expansion, 23.3408 ?

(a) It is the power of 2 only (b) It is a power of 5 only

(c) It is a product of powers of 2 and 5 (d) It may have any factor

Ans. (c) It is a product of powers of 2 and 5

93.) How many prime factors are there in prime factorization of 5005 ?

(a) 5 (b) 1 (c) 3 (d) 4

Ans. (d) 4 prime factors

Solution :- [$5005 = 5 \times 7 \times 11 \times 13$. Thus there are 4 prime factors are there in prime factorization of 5005]

94.) Which one of the following number is an irrational number ?

(a) 0.121212…. (b) 0.1011001010….

(c) 2.353535…. (d) 0.11111…..

Ans. (b) 0.1011001010…..

Explanation :- [A real number is an irrational number when it has a non- terminating, non- repeating decimal representation.]

95.) A rational number can be expressed as a terminating decimal if Its denominator has a factor :

(a) $2\ and\ 5$ (b) $3\ and\ 5$

(c) $2\ and\ 3$ (d) $2.3\ and\ 5$

Ans. (a) $2\ and\ 5$

96.) If the H.C.F and LCM of two numbers are 2 and 60, then the product of two numbers is :

(a) 30 (b) 120 (c) 220 (d) 240

Ans. (b) 120

Hint :- (HCF $\times$ LCM $=$ Product of two numbers)

97.) Which of the following rational numbers will have a terminating decimal expansion ?

(a) $(2-\sqrt{3})^2$ (b) $(2+\sqrt{3})^2$

(c) $(2-\sqrt{3})(2+\sqrt{3})$ (d) Non of these

Ans. (c) $(2-\sqrt{3})(2+\sqrt{3})$

98.) HCF of 96 and 104 is ?

(a) 8 (b) 101 (c) 96 (d) 16

Ans. (a) 8.

Hint: [We have, $96 = 2^5 \times 3,\ 104 = 2^3 \times 13$]

$\therefore$ HCF of $(96, 104) = 2^3 = 8$

99.) $5-\sqrt{3}$ is :

(a) a rational no. (b) an irrational no.

(c) an integer (d) none of these.

Ans. (b) an irrational no.

Hint : ($\sqrt{3}$, is an irrational number, $\therefore 5-\sqrt{3}$ is also an irrational no)

100.) HCF of two consecutive even numbers is :

(a) 2 (b) 1 (c) 3 (d) 4

Ans. (a) 2

[Hint : two consecutive even numbers are (2, 4) common factor =2]

101.) The reciprocal of an irrational number is :

(a) a rational no. (b) an irrational no. (c) an integer

Ans. (b) an irrational no.

102.) A number when divided by 255 gives 3 as quotient and 102 as remainder, then the number is :

(a) 767 (b) 867 (c) 567 (d) 967

Ans. (b) 867

Explanation :- Dividend $=$ Divisor $\times$ Quotient $+$ Remainder

Number (Dividend) $=$ Divisor $\times$ Quotient $+$ Remainder

$= 255 \times 3 + 102$

$= 867$

103.) $5 + \sqrt{3} + \sqrt{5}$ is :

(a) a rational number (b) an irrational number

(c) an integer (d) none of these

Ans. (b) an irrational no.

Hint : (The sum of a rational and irrational number is an Irrational number)

104.) Every positive even integers is of the form ..... for some Integers 'q'.

(a) $2q - 1$ (b) $2q$

(c) $2q + 1$ (d) none of these

Ans. (b) $2q$

105.) If $112 =$ q$\times 6 + r$, then the possible value of r are ?

(a) $2, 3, 5$ (b) $0, 1, 2, 3, 4, 5$

(c) $0, 1, 2, 3$ (d) $1, 2, 3, 4$

Ans. (b) $0, 1, 2, 3, 4, 5$

Hint [$a = bq + r, 0 \leq r < b$ and b $= 6$, Hence r $= 0, 1, 2, 3, 4, 5$]

106.) a and b are called co-prime integers if :

(a) a is a factor of b (b) b is a factor of a

(c) a and b are consecutive primes (d) The HCF of a and b is 1

Ans. (d) The HCF of a and b is 1

Hint :- [a and b are said to be co-prime integers if they have no common factor other than 1. The HCF of two numbers that have no common factor other than one is 1]

107.) Every positive even integers is of the form ..... for some integers 'q' .

(a) $2q - 1$ (b) $2q + 1$ (c) $2q$ (d) none of these

Ans. (c) $2q$

Explanation :- Let aa be an positive integer and b $= 2$. Then applying Euclid's

Division Lemma, we have, $a = 2q + r$ where $0 \leq r < 2$, $r = 0\ or\ 1$. Therefore $a = 2q$ or $2q + 1$

Thus it is clear $a = 2q$, I,e., aa is an even integers is of the form of $2q$

108.) Every positive odd integers is of the form …… where 'q' is some integers.

(a) $3q + 1$ (b) $2q + 1$ (c) $2q + 2$ (d) $5q + 1$

Ans. (b) $2q + 1$

Explanation :- Let a be any positive integer and b $= 2$. Then by applying Euclid's Division Lemma, we have, $a = 2q + r$

where $0 \leq r < 2$, $r = 0\ or\ 1$. Therefore $a = 2q$ or $2q + 1$

Therefore it is clear that $a = 2q$, I.e., a is an even integers,

Therefore $2q + 1$ is an odd integer.

109.) Every positive odd integers is of the form $2q + 1$, where 'q' is some

(a) Natural number (b) Integers (c) Whole number (d) none of these

Ans. (b) integer.

Explanation : [Euclid's division lemma states that for given two positive integers a and b, there exist unique integers q and r such that $a = bq + r$ where r must satisfy $0 \leq r < b$

110.) What is the LCM of the smallest two digit composite number and smallest composite number is :

(a) 4 (b) 20 (c) 30 (d) 14

Ans. (b) 20

Hint: [Smallest two digit composite number $= 10$ and

Smallest composite number $= 4$]

Prime factor of $10 = 2 \times 5\ and\ 4 = 2 \times 2$

$\therefore$ LCM of 10 and $4 = 2 \times 2 \times 5 = 20$, $\therefore$ option (b) is correct

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111.) The HCF of 135 and 225 will be ?

(a) 15 (b) 25 (c) 35 (d) 45

Ans. (d) 45.

Hint (Prime factor of $135 = 3 \times 3 \times 3 \times 5\ and\ 225 = 3 \times 3 \times 5 \times 5$,

$\therefore$ common factor of 135 and 225 $= 3 \times 3 \times 5 = 45$,

Hence HCF $135\ and\ 225 = 45$) $\therefore$ option (d) is correct.

112.) The decimal representation of $\frac{33}{50}$ will be ?

(a) Terminate after 1 decimal place (b) Non Terminate

(c) Terminate after 2 decimal places (d) Terminate after 2 decimal places

Ans. (d) Terminate after 2 decimal places

Hint :- $\left(\frac{33}{50} = \frac{33}{2\times5\times5} = \frac{33}{2\times5^2} = \frac{33\times2}{2^2\times5^2} = \frac{66}{(2\times5)^2} = \frac{66}{100}\right) = 0.66$

$\therefore \frac{33}{50}$ will Terminate after 2 decimal places.

Hence, option (d) is correct.

113.) The least number that is divisible by all the numbers from 1 to 5 is :

(a) 30 (b) 60 (c) 90 (d) 120

Ans. (b) 60

Explanation :- [The required least number is the LCM of (1, 2, 3, 4, 5) $= 60$]

Hence, option (b) is correct.

114.) The LCM of two numbers is 1000. Which of the following cannot be their HCF ?

(a) 100 (b) 200 (c) 300 (d) 500

Ans. (c) 300 Explanation :- [HCF always divides LCM completely]

115.) The least number that is divisible by all the numbers from 1 to 10 is :

(a) 1020 (b) 1520 (c) 2520 (d) 3520

Ans. (c) 2520

Explanation :- [The required least number is the LCM of numbers (1 to 10)

LCM of numbers (1, 2, 3, 4, 5, 6, 7, 8, 9, 10) $= 2520$]

Hence, option (c) is correct.

116.) The largest number which divides 45 and 130 leaving remainder 5 and 10 respectively is :

(a) 30 (b) 40 (c) 85 (d) 175

Ans. (b) 40

Hint :- [Largest such number will be the HCF of $(45-5)$ and $(130-10)$

$i.e.$, HCF of $40\ and\ 120$ is

$40 = 2\times2\times2\times5$ and $120 = 2\times2\times2\times3\times5$

$\therefore$ common factor of 40 and 120 $= 2\times2\times2\times5 = 40$

Hence HCF of 40 and 120 is $= 40$) $\therefore$ option (b) is correct.

117.) If $156 = 2^m.3^n.13^p$, then the value of $m + n + p$ is (or)
sum of the exponents of prime factors in the prime factorisation 156, is :

(a) 1 (b) 2 (c) 3 (d) 4

Ans. (d) 4

Hint: [We have, $156 = 2 \times 2 \times 3 \times 13 \Rightarrow 156 = 2^m \times 3^n \times 13^p$
$m = 2, n = 1, p = 1$ $m + n + p = 2+1+1 = 4$,
Hence, option (d) is correct.

118.) Decimal representation of $\frac{29}{2^2 \times 4^2}$ will be :

(a) Terminating (b) Non-terminating
(c) Non-terminating and repeating (d) None of these

Ans. (a) Terminating

Explanation :- [Since the prime factorization of the denominator of the given rational number $\frac{29}{2^2 \times 4^2}$ is of the form of $2^n 5^m$, where n, m are non-negative integers. Therefore its decimal representation is terminating.]

119.) The largest number that divides 40 and 100, leaving remainder 4 in the first case and 10 in the second case respectively is :

(a) 9 (b) 18 (c) 36 (d) 90

Ans. (b) 18

Hint :- [Largest such number will be the HCF of $(40 - 4)$ and $(100 - 10)$
$i.e.$, HCF of 36 and 90 is
$36 = 2 \times 2 \times 3 \times 3$ and $90 = 2 \times 3 \times 3 \times 5$
$\therefore$ common factor of 36 and 90 $= 2 \times 3 \times 3 = 18$
Hence HCF of 36 and 90 $= 18$,
Therefore option (b) 18 is correct.

120.) If the HCF of 26 and 91 is expressible in the form $26m - 91$, then the Value of m is :

(a) 4 (b) 13 (c) 26 (d) 7

Ans. (a) 4

Hint :- [HCF of 26 and 91 is expressible in the form of $26m - 91$, so first of all find the HCF of 26 and 91]
$26 = 2 \times 13$ and $91 = 7 \times 13$
$\therefore$ common factor of 26 and 91 $= 13$, Hence HCF of 26 and 91 $= 13$

So, $26m - 91 = 13$,

$26m = 13 + 91$

$26m = 104$,

$m = \frac{104}{26} = \frac{\cancel{104}^{4}}{\cancel{26}_{1}} = 4$

∴ option (a) is correct.

121.) The largest number that divides 100 and 408, leaving remainder 4 in each case is :

(a) 4 (b) 18 (c) 36 (d) 90

Ans. (b) 18

Hint :- [Largest such number will be the HCF of $(100 - 4)$ and $(408 - 4)$

$i.e.$, HCF of $96\ and\ 404$ is

$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$ and $404 = 2 \times 2 \times 101$

∴ common factor of 96 and 404 $= 2 \times 2 = 4$

Hence HCF of 96 and 404 $= 4$

∴ option (b) is correct.

122.) If 5 is the least prime factor of a number a and 7 is the least prime factor of a number b, Then the least prime factor of $(a + b)$ is :

(a) 1 (b) 2 (c) 7 (d) 10

Ans. (b) 2

Hint :- [5 is the least prime factor of a number a (a is an odd number) and 7 is the least prime factor of a number b, (b is an odd number)]

∴ $(a + b)$ is an even number, because sum of two odd is even.

So, the least prime factor of $(a + b)$ is 2,

Hence, option (b) is correct

123.) What is the LCM of the smallest prime number and smallest composite natural number ?

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

Ans. (a) 4

Hint: [Smallest prime number $= 2$ and

Smallest composite natural number $= 4 = 2 \times 2$]

∴ LCM of 2 and 4 $= 4$

Hence, option (a) 4 is correct.

124.) There is a circular path around a sports field. Sonia takes 18 minutes to drive one round of the field, while Ravi takes 12 minutes for the same. Suppose they both start at the same point and at the same time and go in same direction. After how many minutes will they meet again at the starting point.

(a) 12 (b) 18 (c) 30 (d) 36

Ans. (d) 36

Hint :- [Required number $=$ LCM$(12, 18)$]

$12 = 2 \times 2 \times 3$ and $18 = 2 \times 3 \times 3$

LCM$(12, 18) = 2^2 \times 3^2 = 4 \times 9 = 36$ ∴ option (d) is correct.

125.) Calculate the least positive integer which is divisible by 12 and 18.

(a) 12 (b) 18 (c) 30 (d) 36

Ans. (d) 36

Hint :- [Required number $=$ LCM$(12, 18)$]

$12 = 2 \times 2 \times 3$ and $18 = 2 \times 3 \times 3$

LCM$(12, 18) = 2^2 \times 3^2 = 4 \times 9 = 36$ ∴ option (d) is correct.

126.) The Decimal representation of $\frac{33}{120}$ will terminate after how many places of decimals ?

(a) One decimal place (b) Two decimal place

(c) More than three decimal place (d) Three decimal place

Ans. (d) Three decimal place

Hint :- [Fraction must be in simplest form] ∴ $\frac{33}{120} = \frac{\cancel{33}^{11}}{\cancel{120}_{40}} = \frac{11}{40}$

$\frac{11}{40} = \frac{11}{2\times2\times2\times5} = \frac{11}{2^3\times5} = \frac{11\times5^2}{2^3\times5^3} = \frac{11\times25}{10^3} = \frac{275}{1000} = 0.275$

So, $\frac{33}{120}$ will terminate after three decimal places.

127.) Which is the smallest odd composite number ?

(a) 5 (b) 7 (c) 9 (d) 11

Ans. (c) 9

Hint: [Composite numbers are those numbers, Which have at least 1 factor other than 1 and the number itself.]

Odd composite numbers are all odd integers that are not prime. Numbers 5, 7, and 11 has no other factor. 9 is a composite number because it has a factor 3×3, Hence 9 is the smallest odd composite number.

128.) Three bells ring at intervals of 3, 6 and 9 minutes. All three rings at 6:AM When will they ring together again ?

(a) 6:07AM (b) 6:08AM (c) 6:18AM (d) 6:28AM

Ans. (b) 2

Hint :- [Required number = LCM of 3, 6 and 9 = 18]

∴Bells will ring together again at 6:18AM]

129.) If two irrational numbers are multiplied, then their product is :

(a) Always irrational (b) Always rational

(c) Rational or irrational (d) None of these

Ans. (c) Rational or irrational

Explanation :- [The product of two irrational numbers can be rational or irrational depending on two numbers.]

For example $\sqrt{2} \times \sqrt{2} = 4$, which is a rational number.

where as $\sqrt{2} \times \sqrt{3} = \sqrt{6}$, which is an irrational number.

∴ option (c) is correct.

130.) Decimal representation of $\frac{129}{2^2 \times 5^2 \times 7^5}$ is ?

(a) Terminating (b) Non-terminating

(c) Non-terminating repeating (d) None of these

Ans. (c) Non-terminating repeating

Explanation : [Since the prime factorization of q is not of the form of $2^n 5^m$, and also has a 7 as its factor, So the decimal expansion of $\frac{129}{2^2 \times 5^2 \times 7^5}$ is a non-terminating decimal expansion.]

131.) If $a = 2^4 \times 3^3$ and $b = 2^3 \times 3^2$, then LCM (a, b) is :

(a) $2^2 \times 3^2 \times 5^3 \times 7$ (b) $2 \times 3 \times 5 \times 7$

(c) $2^4 \times 3^3 \times 2^3 \times 3^2$ (d) $2^4 \times 3^3$

Ans. (d) $2^4 \times 3^3$

132.) The prime factorisation of 3825 :

(a) $3 \times 5^2 \times 35$ (b) $3^2 \times 5^2 \times 17$

(c) $3^2 \times 5 \times 85$ (d) $9 \times 25 \times 17$

Ans. (b) $3^2 \times 5^2 \times 17$

Hint :- We have, $3825 = 3 \times 3 \times 5 \times 5 \times 17 = 3^2 \times 5^2 \times 17$

133.) The HCF and LCM of of 26 and 91 is :

(a) 13, 26 (b) 26, 13 (c) 13, 182 (d) 182, 13

Ans. (c) 13, 182

Explanation :- We have

$$26 = 2 \times 13 \text{ and } 91 = 7 \times 13$$

$$\text{H.C.F of } (26,\ 91) = 13$$

$$\text{LCM of } (26,\ 91) = 2 \times 7 \times 13 = 182$$

134.) The LCM and HCF of of 12, 15 and 21 is :

(a) 3, 120 (b) 3, 420 (c) 420, 3 (d) 120, 3

Ans. (c) 420, 3

Explanation :- We have

$$12 = 2 \times 2 \times 3,\ 15 = 3 \times 5 \text{ and } 21 = 3 \times 7$$

$$\text{H.C.F of (12, 15 and 21)} = 3$$

$$\text{LCM of (12, 15 and 21} = 2 \times 2 \times 3 \times 5 \times 7 = 420$$

Tick the True /False

1) $\sqrt{25}$ is a rational number. (True)
2) $\sqrt{5}$ is an irrational number. (True)
3) $\sqrt{5}$ is a rational number. (False)
4) $3\sqrt{5} \times 2\sqrt{5}$ is a rational number. (True)
5) $3\sqrt{5} \times 2\sqrt{5}$ is a irrational number. (False)
6) $\frac{1}{\sqrt{2}}$ is a rational number. (False)
7) $\sqrt{3}$ is a irrational number. (True)
8) 3 is a rational number. (True)
9) $\sqrt{9}$ is an irrational number. (False)
10) $2\sqrt{3}\ is$ an irrational number. (True)
11) $5 - \sqrt{2}$ is a rational number. (False)
12) Any two positive integers a and b,
$\mathbf{HCF}\ (a, b) \times \mathbf{LCM}\ (a, b) = a \times b$ (True)
13) The number 0.15 can be written as a rational number $\frac{3}{20}$ (True)
14) 140 Can we written as a product of factors in the form of $(2)^2\ (5)(7)$? (True)
15) Every composite number can be expressed (factorized) as a product of primes. (True)
16) Positive integers a and b, there exist unique integers q and r satisfying $a = bq + r,\ 0 \leq\ r\ < b$ (True)
17) If $x = \frac{p}{q}$ be a rational number, such that q is of the form of $2^n 5^m$, where n, m are non negative integers. Then x has a Terminating decimal expansion. (True)
18) If $x = \frac{p}{q}$ be a rational number, such that q is not in the form of $2^n 5^m$, where n, m are non negative integers. Then x has a Non-terminating repeating decimal expansion. (True)
19) $\frac{13}{125}$ is terminating decimal expansion. (True)

20) **Product of two positive integers.** **(True)**

21) $a \times b = \text{HCF}(a, b) \times \text{LCM}(a, b)$ **(True)**

22) $0.12012001200012000\ldots\ldots$ **is a rational number.** **(False)**

23) $\sqrt{4}$ **is an irrational number.** **(False)**

24) **Decimal expansion of** $\frac{17}{8}$ **is terminating.** **(True)**

25) **Prime numbers have no factor other than 1 and the number itself.** **(True)**

Fill in the blanks given below

1) π is a irrational number.

2) The rational form of 0.15 is :- $\frac{3}{20}$

3) Product of two numbers $= \text{HCF} \times \text{LCM}$

4) The sum (Addition) or difference (subtraction) of a rational and an irrational number Is irrational number.

5) The product and quotient of a non zeroes rational and an irrational number is irrational .

6) If $x = \frac{p}{q}$ be a rational number, such that the prime factorization of q is of the form of $2^n 5^m$, where n, m are non negative integers. Then x has a terminates / terminating decimal expansion.

7) If $x = \frac{p}{q}$ be a rational number, such that the prime factorization of q is not in the form of $2^n 5^m$, where n, m are non negative integers. Then x has a non-terminating repeating decimal expansion.

8) If $a = bq + r$, then least value of r is zero.

9) The decimal representation of a rational number is eithe terminating or non-terminating expansion.

10) $43.\overline{123456789}$ is a/an Rational number.

11) 43.123456789 is a/an Rational number.

12) 0.120120012000120000 is a/an Non rational/ Irrational number.

13) If a and b are two Prime numbers, then their HCF 1.

14) $\frac{6-\sqrt{2}}{5}$ is an irrational number, it is being given that $\sqrt{2}$ is an irrational number.

15) The sum of the exponents of prime factors in the prime factorisation 140, is 4 .

16) HCF of 26 and 91 is 13.

17) If $a = 2 \times 3^2 \times 5^3$ and $b = 2^2 \times 5^2 \times 7$, then LCM (a, b) is $2^2 \times 3^2 \times 5^3 \times 7$.

18) The condition satisfied by q so that a rational number $\frac{p}{q}$ has a terminating decimal expansion, is $q = 2^n 5^m$ where m, n be.