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

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

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

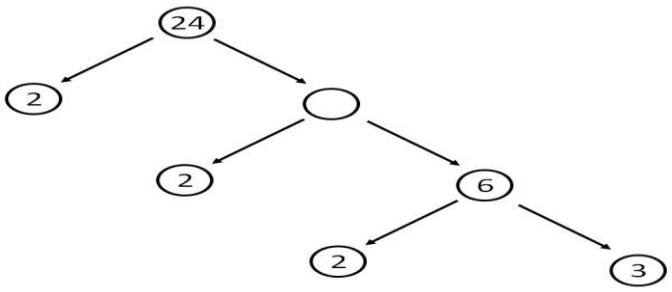
3.) Decimal representation of rational number $\frac{17}{8}$ will be :

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

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

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



(a) 12 (b) 48
(c) 3 (d) 6

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) $\frac{13}{30}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

15.) 43.123456789 is a ……. Number.

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

16.) $0.12012001200012000\ldots\ldots\ldots$ is a ?

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

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

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

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

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

19.) π is a/an …….. number.

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

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

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

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

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

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

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

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) $2^2 \times 7^2$

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

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

25.) Factors of 24 are :

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

26.) 5 is the prime factor of ?

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

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

(a) Co prime (b) Non-terminating

(c) Terminating (d) Prime

28.) The pair of co-prime is :

(a) 9, 25 (b) 9, 21 (c) 32, 40 (d) 9, 18

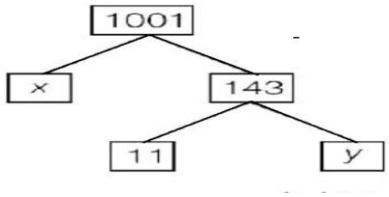
29.) Find the value of x and y in given figure :

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

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

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

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



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

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

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

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

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) $1 < r < b$

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

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

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

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

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) $2^2 \times 3 \times 5^2$

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) $2^2 \times 3^2 \times 5$

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

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

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

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

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

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

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

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

41.) 2π is a/an …….. number.

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

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

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

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

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

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

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

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

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

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

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

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

50.) HCF of 96 and 404 is ?

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

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) $\frac{11}{13}$

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

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

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

(a) $\frac{73}{1850}$ (b) $\frac{96}{2^3\times5^4}$ (c) $\frac{35}{42}$ (d) $\frac{129}{2^3\times5^7\times7^5}$

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

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

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

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

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

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

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.

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

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

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

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

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

(a) a rational number (b) an irrational number
(c) an integer (d) none of these.

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

(a) yes (b) No
(c) May be or may not be (d) Non of these

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) $\frac{79}{210}$

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

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

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

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

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

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

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

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

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

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

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

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

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) Non of these

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

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

(a) prime number (b) an irrational number
(c) composite number (d) none of these.

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

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

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

(a) 1 (b) 2 (c) 3 (d) 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) $2^2 \times 3 \times 5^2$

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.

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

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

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

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

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) $2 \times 3^2 \times 5^2$

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

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

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

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

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

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

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

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

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

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

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

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)

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

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

(a) prime number (b) an irrational number

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

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

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

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

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

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

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

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

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

(a) 0.121212…. (b) 0.1011001010….

(c) 2.353535…. (d) 0.11111…..

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) $2.3 \; and \; 5$

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

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**

98.) HCF of 96 and 104 is ?

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

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

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

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

100.) HCF of two consecutive even numbers is :

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

101.) The reciprocal of an irrational number is :

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

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**

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

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

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

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**

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

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

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

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**

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**

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

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

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.**

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**

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

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

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**

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

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

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

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

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

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

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

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

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**

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**

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**

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

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

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

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

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

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

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

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

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

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

127.) Which is the smallest odd composite number ?

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

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

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

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

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) $2^4 \times 3^3$

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) $9 \times 25 \times 17$

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

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

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

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

-: ANSWER KEY :-

1.)- Ans. (a) $2^m5^n \text{ (or) } 2^n5^m$

2.)- 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.)- 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.)- 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.)- Ans. (a) 12

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

Hint :- $\left[\frac{17}{8} = \frac{17}{2\times2\times2} = \frac{17}{2^3}\right.$ **Here,** $8 = 2\times2\times2 = 2^3$ **can be expressed as** $\left.2^35^0\right]$ **Hence,** $\frac{17}{8}$ **represents terminating decimal expansion .**

7.)- Ans. (a) Terminating.

Hint :- (Because, q is of the form of $2^35^2\ (or)\ 2^m5^n$**. Hence,** $\frac{23}{2^3\times5^2}$ **represents terminating decimal expansion.)**

8.)- 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^n5^m**, where** n, m **are non negative integers. Then** x **has a terminating decimal expansion.**

9.)- Ans. (b) Two decimal place.

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

10.)- Ans. (b) an irrational number.

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

12.)- Ans. (b) an irrational no.

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

14.)- Ans. (a) a rational number.

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

<u>Explanation</u> :- (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.)- Ans. (a) a rational no.

16.)- Ans. (a) Irrational.

17.)- Ans. (a) a rational no.

18.)- Ans. (a) a rational number.

19.)- Ans. (a) Irrational.

Hint ($\pi = 3.141592\ldots$, Which is non-terminating and non repeating decimal expansion) $\therefore$ It is an irrational number.

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

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

23.)- 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.)- 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.)- Ans. (a) $2^3 \times 3$

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

26.)- 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.)- 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.)- 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

28.)- Ans. (a) 9, 25

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

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

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

33.)- Ans. (a) 13.

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

Common factor of 26 and 91 $= 13$, so HCF $26\ and\ 91\ = 13$)

34.)- Ans. (b) 1.

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

There is no common factor of 8, 9 and 25 so, HCF of 8, 9 and 25 $= 1$

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

36.)- 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 $= 2^2 \times 3^2 \times 5^2 = 4 \times 9 \times 25\ = 900$. Hence, Correct answer is (b)

37.)- Ans. (c) 4

Explanation :- ($3 + 5 = 8$, which is divisible by 4 and $15 + 17 = 32$, which is divisible by 4)

38.)- Ans. (a) Even number

39.)- Ans. (a) Irrational.

40.)- Ans. (a) Irrational.

41.)- 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.)- Ans. (c) 5

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

43.)- Ans. (c) 23

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

44.)- Ans. (d) 3

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

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

45.)- Ans. (d) 3

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

46.)- 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.)- Ans. (d) 182 Hint :- $\mathbf{LCM} = \frac{\mathbf{product\ of\ numbers}}{\mathbf{HCF}}$

$$= \frac{26 \times 91}{13} = \frac{2_{\cancel{26}} \times 91}{\cancel{13}_1} = 2 \times 91 = 182$$

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

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

50.)- 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 96 and 404 $= 4$

51.)- 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 terminates or 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.)- Ans. (a) 32.

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

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

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

54.)- Ans. (a) a rational no.

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

55.)- 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 $= 2^2 \times 3 \times 5 = 60$. $\therefore$ Correct answer is (b) 60

56.)- 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.)- Ans. (a) a rational number.

58.)- Ans. (a) Terminating.

Hint :- $\left[\frac{13}{3125} = \frac{13}{5 \times 5 \times 5 \times 5 \times 5} = \frac{13}{5^5}\right]$ 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.)- Ans. (d) 26

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

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

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

60.)- Ans. (c) 20

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

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

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

61.)- Ans. (c) $x^3 y^2$

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

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

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

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

62.)- Ans. (b) an irrational no.

63.)- Ans. (a) Yes.

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

64.)- Ans. (d) $\frac{79}{210}$

Hint :- $\left[\frac{79}{210} = \frac{79}{2\times3\times5\times7}\right]$ Here, q = 210 = $2 \times 3 \times 5 \times 7$ is not of the form of $2^m 5^n$. Hence, $\frac{79}{210}$ is not a a terminating decimal.

65.)- 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 ∴ correct answer is (c) 60.

66.)- 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

∴ correct answer is (d) 18.

67.)- Ans. (a) Irrational.

68.)- Ans. (a) Irrational.

69.)- Ans. (b) Rational.

70.)- Ans. (a) Irrational.

71.)- Ans. (a) Yes.

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

72.)- Ans. (b) No

Explanation :- [HCF always divides LCM completely]

73.)- 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.)- Ans. (a) 1

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

75.)- Ans. (d) 4

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

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

77.)- Ans. (b) an irrational number.

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.)- Ans. (a) ab

79.)- Ans. (a) $\mathbf{a^2bc}$

80.)- Ans. (b) 3 decimal places.

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

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

82.)- Ans. (a) lm

83.)- Ans. (d) 6

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

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

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

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

<u>Hint</u> :- Here, $2\times 3^2=2\times 3\times 3$ and $2^2\times 3=2\times 2\times 3$

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

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

85.)- Ans. (a) 0.12012001200012000 … … ….

86.)- Ans. (a) 1

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

87.)- 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.)- Ans. (d) 4

Hint: [Given $a=bq+r, 0\le r<b$ and $\mathbf{b=4}$]

89.)- 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.)- Ans. (a) 0

91.)- 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 $2 = 2$

Ans. (d) 2

Hint: [Smallest composite number $= 4$ and Smallest prime number $= 2$]

$\therefore$ HCF $= 2$

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

93.)- Ans. (d) 4 prime factors

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

94.)- Ans. (b) 0.1011001010…….

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

95.)- Ans. (a) 2 and 5

96.)- Ans. (b) 120

Hint :- ($\text{HCF} \times \text{LCM} = \text{product of numbers}$)

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

98.)- 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.)- Ans. (b) an irrational no.

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

100.)- Ans. (a) 2

101.)- Ans. (b) an irrational no.

102.)- Ans. (b) 867

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

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

$$= 255 \times 3 + 102$$

$$= 867$$

103.)- Ans. (b) an irrational no.

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

104.)- Ans. (b) $2q$

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

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

106.)- 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.)- 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.)- 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.)- 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.)- Ans. (b) 20

Hint: [Smallest two digit composite number $= 10$ **and Smallest composite number** $= 4$**]**

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

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

111.)- 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.)- Ans. (d) Terminate after 2 decimal places.

Hint :- $\left(\frac{33}{50} = \frac{33}{2 \times 5 \times 5} = \frac{33}{2 \times 5^2} = \frac{33 \times 2}{2^2 \times 5^2} = \frac{66}{(2 \times 5)^2} = \frac{66}{100}\right) = 0.66$

$\therefore \frac{33}{50}$ **will Terminate after 2 decimal places. Hence, option (d) is correct.**

113.)- Ans. (b) 60

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

Hence, option (b) is correct.

114.)- Ans. (c) 300

Explanation :- [HCF always divides LCM completely]

115.)- 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.)- 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**

$40 = 2 \times 2 \times 2 \times 5$ **and** $120 = 2 \times 2 \times 2 \times 3 \times 5$

$\therefore$ **common factor of 40 and 120** $= 2 \times 2 \times 2 \times 5 = 40$

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

117.)- 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.)- Ans. (a) Terminating

<u>Explanation</u> :- [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.)- 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 (b) is correct.**

120.)- 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, $26m - 91 = 13$,

$$26m = 13 + 91$$

$$26m = 104,$$

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

$\therefore$ Option (a) 4 is correct.

121.)- Ans. (b) 18

Hint :- [Largest such number will be the HCF of $(100 - 4)$ and $(408 - 4)$ $i.e.$, HCF of $66\ and\ 404$ is

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

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

Hence HCF of 96 and 404 $= 4$ $\therefore$ Option (b) 18 is correct.

122.)- 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)]

$\therefore (a + b)$ 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.)- Ans. (a) 4

Hint: [Smallest prime number $= 2$ and

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

$\therefore$ LCM of 2 and 4 $= 4$

124.)- Ans. (d) 36

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

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

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

125.)- Ans. (d) 36

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

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

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

126.)- Ans. (d) Three decimal place

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

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

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

127.)- 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.)- Ans. (b) 2

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

Bells will ring together again at 6:18AM]

129.)- 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.**

$\therefore$ **option (c) is correct.**

130.)- Ans. (c) Non-terminating repeating

Explanation : [Since the prime factorization of q **is not of the form of** 2^n5^m **and also has a 7 as its factor, So the decimal expansion of** $\frac{129}{2^2\times5^2\times7^5}$ **is a non-terminating decimal expansion.]**

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

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

133.)- Ans. (c) 13, 182

Explanation :- We have

$26 = 2 \times 13$ **and** $91 = 7 \times 13$

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

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

134.)- Ans. (c) 420, 3

Explanation :- We have

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

H.C.F of (12, 15 and 21) $= 3$

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 <u>irrational</u> number.

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

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

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

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

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 <u>terminates / terminating</u> 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 <u>non-terminating repeating</u> decimal expansion.

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

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

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

11) 43.123456789 is a/an <u>Rational</u> number.

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

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

14) $\frac{6-\sqrt{2}}{5}$ is an <u>irrational</u> 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 <u>4</u> .

16) HCF of 26 and 91 is <u>13</u>.

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

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