Multiple Choice Questions

Q1-

Which of the following numbers has terminating decimal expansion ?

(A) $\frac{37}{45}$ (B) $\frac{21}{2^3 5^6}$ (C) $\frac{17}{49}$ (D) $\frac{89}{2^2 3^2}$

Q2--

The [HCF $\times$ LCM] for the numbers 50 and 20 is

(A) 10 (B) 100 (C) 1000 (D) 50

Q3--

Which of the following numbers has terminating decimal expansion ?

(A) $\frac{37}{45}$ (B) $\frac{21}{2^3 5^6}$ (C) $\frac{17}{49}$ (D) $\frac{89}{2^2 3^2}$

Q4--

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) $1 < r < b$ (B) $0 < r \le b$

(C) $0 \le r < b$ (D) $0 < r < b$

Q5--

The decimal expansion of the rational number $\frac{31}{2^2.5}$ will terminate after :

(A) one decimal place (B) two decimal places

(C) three decimal places (D) more than 3 decimal places

Q6--

Given that HCF (2520, 6600) = 40, LCM (2520, 6600) = $252 \times k$, then the value of k is :

(A) 1650 (B) 1600 (C) 165 (D) 1625

Q7--

If p, q are two co-prime numbers. HCF (p, q) is :

(A) p (B) q (C) pq (D) 1

Q8

The decimal expansion of the rational number $\frac{23}{2^2.5}$ will terminate after.

(A) one decimal place
(B) two decimal places
(C) three decimal places
(D) more than three decimal places

Q9--

n^2-1 is divisible by 8, if n is

(A) an integer
(B) a natural number
(C) an odd integer
(D) an even integer

Q10--

If p, q are two prime numbers, then LCM(p, q) is :

(A) 1 (B) P (C) q (D) pq

Q11-

If d = HCF (48, 72), the value of d is :

(A) 24 (B) 48 (C) 12 (D) 72

Q12--

The decimal expansion of the rational number $\frac{11}{2^3.5^2}$ will terminate after :

(A) one decimal place
(B) two decimal places
(C) three decimal place
(D) more than 3 decimal places

Q13--

If the HCF of 65 and 117 is expressible in the form 65 m − 117, then the value of m is :

(A) 4 (B) 2 (C) 3 (D) 1

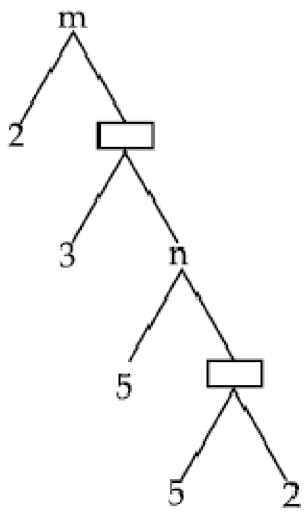
Q14--

If d = LCM (36, 198), then the value of d is :

(A) 396 (B) 198 (C) 36 (D) 1

Q15

In the adjoining factor tree, find the numbers m, n :



A) 2,6 B)300, 150 C) 10 ,50 D)25,6

Q16--

Which of the following is a non-terminating repeating decimal ?

(A) $\frac{35}{14}$ (B) $\frac{14}{35}$ (C) $\frac{1}{7}$ (D) $\frac{7}{8}$

Q17--

If $x = 2^3 \times 3 \times 5^2$, $y = 2^2 \times 3^3$, then HCF (x, y) is :

(A) 12 (B) 108 (C) 6 (D) 36

Q18--

The rational number of decimal number $0.\overline{6}$ is :

(a) $\frac{33}{50}$ (b) $\frac{2}{3}$ (c) $\frac{111}{167}$ (d) $\frac{1}{3}$

Q19--

Given that HCF $(253, 440) = 11$ and LCM $(253, 440) = 253 \times R$. The value of R is :

(a) 400 (b) 40

(c) 440 (d) 253

Q20

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

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

Q21--

Given that HCF (26, 91) = 13, then LCM of (26, 91) is :

(A) 2366 (B) 182 (C) 91 (D) 364

Q22--

$\left(2+\sqrt{5}\right)\left(2+\sqrt{5}\right)$ expression is :

(A) A rational number (B) A whole number

(C) An irrational number (D) A natural number

Q23--

If the HCF of 85 and 153 is expressible in the form $85n - 153$, then value of n is :

(A) 3 (B) 2 (C) 4 (D) 1

Q24--

$\left(\sqrt{2}-\sqrt{3}\right)\left(\sqrt{3}+\sqrt{2}\right)$ is

(A) A rational number (B) A whole number

(C) An irrational number (D) A natural number

Q25--

A rational number can be expressed as a terminating decimal if the denominator has factors

(A) 2, 3 or 5 (B) 2 or 3 (C) 3 or 5 (D) 2 or 5

Q26--

The decimal expansion of $\frac{33}{2^2 \times 5}$ will terminate after :

(A) One decimal place (B) Two decimal places

(C) Three decimal places (D) More than three decimal places

Q27

Which is not an Irrational number ?

(A) $5-\sqrt{3}$ (B) $\sqrt{2}+\sqrt{5}$ (C) $4+\sqrt{2}$ (D) $6+\sqrt{9}$

Q28--

Which is not irrational number ?

(A) $\sqrt{5}-\sqrt{3}$ (B) $6+\sqrt{9}$ (C) $\sqrt{3}-1$ (D) $2\sqrt{3}-3$

Q29--

How many prime factors are there in prime factorization of 5005.

(A) 2 (B) 4 (C) 6 (D) 7

Q30--

119^2-111^2 is :

(A) Prime number (B) Composite number

(C) An odd prime number (D) An odd composite number

Q31--

If least prime factor of a is 3 and least prime factor of b is 7, the least prime factor of $(a+b)$ is :

(A) 2 (B) 3 (C) 5 (D) 11

Q32—

If a, b are coprime, then a^2, b^2 are :

(A) Coprime (B) Not coprime

(C) Odd numbers (D) Even numbers

Q33--

The product of the HCF and LCM of the smallest prime number and the smallest composite number is :

(A) 2 (B) 4 (C) 6 (D) 8

Q34--

The decimal expansion of the rational number $\frac{43}{2^4\times 5^3}$ will terminate after :

(A) 3 places (B) 4 places (C) 5 places (D) 1 place

Q46

Euclid's division lemma states that if a and b are any two +ve integers, then there exists unique integers q and r such that

(A) $a = bq + r, 0 < r < b$ (B) $a = bq + r, 0 \leq r \leq b$

(C) $a = bq + r, 0 \leq r < b$ (D) $a = bq + r, 0 < b < r$

Q36--

Which of the following is not an irrational number ?

(A) $5 - \sqrt{3}$ (B) $\sqrt{5} + \sqrt{3}$ (C) $4 + \sqrt{2}$ (D) $5 + \sqrt{9}$

Q37--

Which of the following is rational ?

(A) $\sqrt{6} + \sqrt{9}$ (B) $\sqrt{2} + \sqrt{4}$ (C) $\sqrt{4} + \sqrt{9}$ (D) $\sqrt{3} + \sqrt{5}$

Q38--

Euclid's division lemma states that if a and b are two positive integers, then there exist unique integers q and r such that :

(A) $a = bq + r, 0 < r < b$ (B) $a = bq + r, 0 \leq r \leq b$

(C) $a = bq + r, 0 \leq r < b$ (D) $a = bq + r, 0 \leq b < r$

Q39--

Which of the following rational numbers have a terminating decimal expansion ?

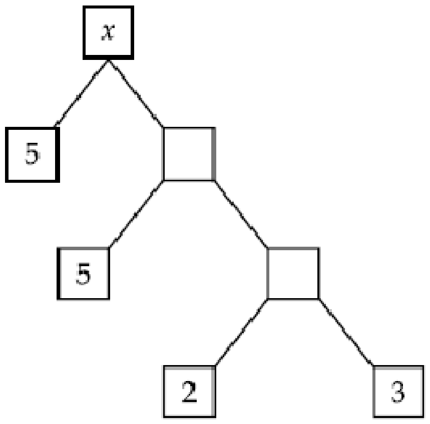
(A) $\frac{125}{441}$ (B) $\frac{77}{210}$

(C) $\frac{15}{1600}$ (D) $\frac{129}{2^2 \times 5^2 \times 7^2}$

Q40--

Q46

The value of x in the factor tree is :



(A) 30 (B) 150 (C) 100 (D) 50

Q41--

Which of the following rational numbers have non terminating and repeating decimal expansion ?

(A) $\frac{15}{1600}$ (B) $\frac{17}{6}$ (C) $\frac{23}{8}$ (D) $\frac{35}{50}$

Q42--

According to Euclid's division algorithms HCF of any two positive integers a and b with $a > b$ is obtained by applying Euclid's division lemma to a and b to find q and r such that $a = bq + r$ where r must satisfy.

(A) $1 < r < b$ (B) $0 < r < b$ (C) $0 \leq r < b$ (D) $0 < r \leq b$

Q43--

The decimal expansion of $\frac{141}{120}$ will terminate after how many places of decimals ?

(A) 1 (B) 2 (C) 3 (D) will not terminate

Q44--

The decimal expansion of $\frac{131}{120}$ will terminate after how many places of decimal ?

(A) 1 (B) 2 (C) 3 (D) will not terminate

Q46

Q45--

The decimal expansion of $\frac{6}{1250}$ will terminate after how many places of decimal ?

(A) 1 (B) 2 (C) 3 (D) 4

Q46--

According to Euclid's division algorithm using Euclid's division lemma for any two positive integers a and b with a > b enables us to find :

(A) HCF (B) LCM

(C) Decimal expansion (D) Probability

Q47--

The decimal expansion of $\frac{7}{125}$ will terminate after how many places of decimal

(A) 1 (B) 2 (C) 3 (D) 4

Q48—

For some integer m, every even integer is of the form

(A) m (B) $m + 1$

(C) $2m$ (D) $2m + 1$

Q49—

For some integer q, every odd integer is of the form

(A) q (B) $q + 1$

(C) $2q$ (D) $2q + 1$

Q50--

The largest number which divides 70 and 125, leaving remainders 5 and 8, respectively, is

(A) 13 (B) 65

(C) 875 (D) 1750

Q51—

If two positive integers a and b are written as

$a = x^3y^2$ and $b = xy^3$; x, y are prime numbers, then HCF (a, b) is

(A) xy (B) xy^2 (C) x^3y^3 (D) x^2y^2

Q52-

If two positive integers p and q can be expressed as

$p = ab^2$ and $q = a^3b$; a, b being prime numbers, then LCM (p, q) is

(A) ab (B) a^2b^2 (C) a^3b^2 (D) a^3b^3

Q46

Q53—

The product of a non-zero rational and an irrational number is

(A) always irrational (B) always rational

(C) rational or irrational (D) one

Q54—

The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is

(A) 10 (B) 100 (C) 504 (D) 2520

Q55—

The decimal expansion of the rational number $\frac{14587}{1250}$ will terminate after:

(A) one decimal place (B) two decimal places

(C) three decimal places (D) four decimal places

Q55—. $5 \times 11 \times 13 + 7$ is a

(a) prime number (b) composite number (c) odd number (d) none

Q56—

Which of these numbers always ends with the digit 6.

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

Q57—

For a, b ($a \neq b$) positive rational numbers $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b})$ is a _______

(a) Rational number (b) irrational number (c) 0 (d) $(\sqrt{a} - \sqrt{b})^2$

Q58—

If p is a positive rational number which is not a perfect square, then -3 p is

(a) Integer (b) rational number (c) irrational number (d) none of the above.

Q-59--All decimal numbers are–

(a) rational numbers (b) irrational numbers (c) real numbers (d) integers

Q-60 In Euclid Division Lemma, when $a = bq + r$, where a, b are positive integers which one is correct.

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

Q-61Which of the following numbers is irrational number

(a) 3.131131113... (b) 4.46363636... (c) 2.35 (d) b and c both

Q46

Q-62 HCF is always

(a) multiple of L.C.M. (b) Factor of L.C.M.

(c) divisible by L.C.M. (d) a and c both

Q-63 The product of two consecutive natural numbers is always.

(a) an even number (b) an odd number

(c) a prime number (d) none of these

Q-64 Which of the following is an irrational number between 0 and 1

(a) 0.11011011... (b) 0.90990999... (c) 1.010110111... (d) 0. 303030..

Q-65 $p^n = (a \times 5)^{n}$. For p^n to end with the digit zero a = __ for natural no. n

(a) any natural number (b) even number (c) odd number (d) none.