

MATHEMATICS**CLASS -10****Chapter – 1: Real NUMBERS****“WORKSHEET - 1”***Practice Multiple Choice Questions (20 Questions with Answer Key)*

Q1. The exponent of 2 in the prime factorization of 144 is:

- (a) 2 (b) 4
(c) 1 (d) 6

Q2. The HCF of two numbers is 27 and their LCM is 162. If one of the numbers is 54, what is the other number?

- (a) 36 (b) 81
(c) 9 (d) 108

Q3. The HCF of the smallest composite number and the smallest prime number is:

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

Q4. If two positive integers a and b are written as $a = x^3y^2$ and $b = xy^3$, where x, y are prime numbers, then HCF(a, b) is:

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

Q5. If two positive integers p and q can be expressed as $p = ab^2$ and $q = a^3b$, where a, b being prime numbers, then LCM(p, q) is:

- (a) ab (b) a^2b^2
(c) a^3b^2 (d) a^3b^3

Q6. The product of a non-zero rational and an irrational number is:

- (a) always irrational (b) always rational
(c) rational or irrational (d) one

Q7. 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

Q8. If the HCF of 65 and 117 is expressible in the form $65m - 117$, then the value of m is:

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

Q9. The sum of powers of prime factors involved in the prime factorization of 196 is:

- (a) 2
- (b) 4
- (c) 6
- (d) 5

Q10. If n is a natural number, then $9^n - 5^n$ always ends with:

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

Q11. The total number of factors of a prime number is:

- (a) 1
- (b) 2
- (c) 0
- (d) 3

Q12. The LCM of two numbers is 1200. Which of the following cannot be their HCF?

- (a) 600
- (b) 500
- (c) 400
- (d) 200

Q13. If $\text{HCF}(a, 8) = 4$ and $\text{LCM}(a, 8) = 24$, then the value of a is:

- (a) 8
- (b) 10
- (c) 12
- (d) 14

Q14. The ratio of LCM and HCF of the least composite and the least prime numbers is:

- (a) 1 : 2
- (b) 2 : 1
- (c) 1 : 1
- (d) 1 : 3

Q15. If a and b are co-prime numbers, then a^2 and b^2 are:

- (a) Co-prime
- (b) Not co-prime
- (c) Even numbers
- (d) Odd numbers

Q16. Which of the following is an irrational number?

- (a) $22/7$
- (b) 3.1416
- (c) 3.14161416...
- (d) 3.141141114...

Q17. If n is any natural number, then $6^n - 5^n$ always ends with:

- (a) 1 (b) 3
(c) 5 (d) 7

Q18. The largest number which divides 70 and 125, leaving remainders 5 and 8 respectively, is:

- (a) 13 (b) 65
(c) 875 (d) 1750

Q19. If two numbers are co-prime, then their HCF is:

- (a) 0 (b) 1
(c) Their product (d) Sum of numbers

Q20. If two numbers are co-prime, then their LCM is:

- (a) 1 (b) 0
(c) Their product (d) Their sum

Q21. The prime factorization of 3825 is:

- (a) $3 \times 5^2 \times 21$ (b) $3^2 \times 5^2 \times 17$
(c) $3^3 \times 5 \times 17$ (d) $3^2 \times 25 \times 17$

Q22. If $a = 2^3 \times 3$, $b = 2 \times 3 \times 5$, $c = 3^n \times 5$ and $\text{LCM}(a, b, c) = 2^3 \times 3^2 \times 5$, then $n =$

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

Q23. The decimal expansion of the number $14587 / 1250$ will terminate after:

- (a) One decimal place (b) Two decimal places
(c) Three decimal places (d) Four decimal places

Q24. Which of the following numbers has a terminating decimal expansion?

- (a) $37/45$ (b) $21/2^2 \times 5^3 \times 7$
(c) $17/49$ (d) $89/2^2 \times 3^2$

Q25. If p and q are prime numbers, then $\text{HCF}(p, q)$ is:

- (a) p (b) q
(c) 1 (d) pq

Q26. The set of real numbers consists of:

- (a) Only rational numbers (b) Only irrational numbers
(c) Both rational and irrational numbers (d) Integers only

Q27. If 4^n ends with 0 for any natural number n , then prime factorization of 4^n must contain:

- (a) 3
- (b) 5
- (c) 7
- (d) 11

Q28. The product of three consecutive positive integers is always divisible by:

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

Q29. If $\sqrt{2}$ is an irrational number, then $3 + 2\sqrt{2}$ is:

- (a) Rational number
- (b) Irrational number
- (c) Whole number
- (d) Integer

Q30. The prime factorization of 156 is:

- (a) $2^2 \times 3 \times 13$
- (b) $2 \times 3^2 \times 13$
- (c) $2^2 \times 3^2 \times 13$
- (d) $2 \times 3 \times 13^2$

Q31. The HCF of 96 and 404 is:

- (a) 2
- (b) 4
- (c) 8
- (d) 12

Q32. The LCM of 96 and 404 is:

- (a) 9696
- (b) 9090
- (c) 4040
- (d) 4646

Q33. For any positive integer a , $a^3 - a$ is always divisible by:

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

Q34. If $\text{HCF}(306, 657) = 9$, then $\text{LCM}(306, 657)$ is:

- (a) 22338
- (b) 22388
- (c) 23238
- (d) 23328

Q35. The number $(\sqrt{2} - \sqrt{3})(\sqrt{2} + \sqrt{3})$ is:

- (a) Rational number
- (b) Irrational number
- (c) Complex number
- (d) Prime number

Q36. If $a = 2^2 \times 3^3$, $b = 2^3 \times 3^2$, then $\text{HCF}(a, b)$ is:

- (a) 36 (b) 72
(c) 108 (d) 18

Q37. If $a = 2^2 \times 3^3$, $b = 2^3 \times 3^2$, then LCM(a, b) is:

- (a) 36 (b) 72
(c) 108 (d) 216

Q38. The sum of a rational number and an irrational number is:

- (a) Always rational (b) Always irrational
(c) Sometimes rational (d) Zero

Q39. The smallest prime number is:

- (a) 0 (b) 1
(c) 2 (d) 3

Q40. The smallest composite number is:

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

Q41. The product of HCF and LCM of two numbers 15 and 20 is equal to:

- (a) 300 (b) 150
(c) 60 (d) 100

Q42. Three bells toll together at intervals of 9, 12, 15 minutes respectively. If they start tolling together, after what time will they toll together next?

- (a) 180 min (b) 90 min
(c) 360 min (d) 60 min

Q43. Which of the following is NOT an irrational number?

- (a) $2 - \sqrt{3}$ (b) $(\sqrt{2} + \sqrt{3})^2$
(c) $(\sqrt{2} - \sqrt{3})(\sqrt{2} + \sqrt{3})$ (d) $2\sqrt{7}$

Q44. If the LCM of two prime numbers p and q ($p > q$) is 221, then the value of $3p - q$ is:

- (a) 4 (b) 28
(c) 38 (d) 48

Q45. If x and y are positive odd integers, then $x^2 + y^2$ is:

- (a) Even and divisible by 4 (b) Even but not divisible by 4
(c) Odd (d) Prime

Q46. If n is a natural number, then 4^n ends with 0 for how many values of n ?

- (a) 1 (b) 2
(c) Infinite (d) None

Q47. The exponent of 5 in the prime factorization of 3750 is:

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

Q48. If $\text{HCF}(a, b) = 12$ and $a \times b = 1800$, then $\text{LCM}(a, b)$ is:

- (a) 150 (b) 90
(c) 200 (d) 120

Q49. The number of prime factors in the prime factorization of 5005 is:

- (a) 2 (b) 4
(c) 6 (d) 7

Q50. If a and b are two consecutive natural numbers, then their HCF is:

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

ANSWER KEY & SOLUTIONS GUIDE

Q.No - Ans	Q.No - Ans	Q.No - Ans	Q.No - Ans	Q.No - Ans
Q1: (b) 4	Q11: (b) 2	Q21: (b) $3^2 \times 5^2 \times 17$	Q31: (b) 4	Q41: (a) 300
Q2: (b) 81	Q12: (b) 500	Q22: (b) 2	Q32: (a) 9696	Q42: (a) 180 min
Q3: (b) 2	Q13: (c) 12	Q23: (d) Four decimal places	Q33: (c) 6	Q43: (c) $(\sqrt{2} - \sqrt{3})(\sqrt{2} + \sqrt{3})$
Q4: (b) xy^2	Q14: (b) $2 : 1$	Q24: (b) $21/2^2 \times 5^3 \times 7$	Q34: (a) 22338	Q44: (c) 38
Q5: (c) a^3b^2	Q15: (a) Co-prime	Q25: (c) 1	Q35: (a) Rational number	Q45: (b) Even but not divisible by 4
Q6: (a) always irrational	Q16: (d) 3.141141114...	Q26: (c) Both rational and irrational numbers	Q36: (a) 36	Q46: (d) None
Q7: (d) 2520	Q17: (a) 1	Q27: (b) 5	Q37: (d) 216	Q47: (b) 4
Q8: (b) 2	Q18: (a) 13	Q28: (b) 6	Q38: (b) Always irrational	Q48: (a) 150
Q9: (b) 4	Q19: (b) 1	Q29: (b) Irrational number	Q39: (c) 2	Q49: (b) 4
Q10: (c) 4	Q20: (c) Their product	Q30: (a) $2^2 \times 3 \times 13$	Q40: (d) 4	Q50: (b) 1