MATHEMATICS

CLASS -10

Chapter – 1: Real NUMBERS

"WORKSHEET - 2"

Practice Multiple Choice Questions (30 Questions with Answer Key)

Q1. 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) $3^2 \times 25 \times 17$

Q2. If $a = 2^3 \times 3$, $b = 2 \times 3 \times 5$, $c = 3^n \times 5$ and LCM(a, b, c) $= 2^3 \times 3^2 \times 5$, then n =

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

Q3. 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

Q4. 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) $89/2^2 \times 3^2$

Q5. If p and q are prime numbers, then HCF(p, q) is:

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

Q6. The set of real numbers consists of:

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

Q7. 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

Q8. The product of three consecutive positive integers is always divisible by:

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

Q9. If √2 is an irrational number, then 3 + 2√2 is:

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

Q10. 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) $2 \times 3 \times 13^2$

Q11. The HCF of 96 and 404 is:

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

Q12. The LCM of 96 and 404 is:

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

Q13. For any positive integer a, a^3 - a is always divisible by:

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

Q14. If HCF(306, 657) = 9, then LCM(306, 657) is:

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

Q15. The number (√2 - √3)(√2 + √3) is:

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

Q16. If $a = 2^2 \times 3^3$, $b = 2^3 \times 3^2$, then HCF(a, b) is:

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

Q17. 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

Q18. The sum of a rational number and an irrational number is:

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

Q19. The smallest prime number is:

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

Q20. The smallest composite number is:

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

Q21. The product of HCF and LCM of two numbers 15 and 20 is equal to:

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

Q22. 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

Q23. 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) $2\sqrt{7}$

Q24. 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

Q25. 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

Q26. 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

Q27. The exponent of 5 in the prime factorization of 3750 is:

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

Q28. If HCF(a, b) = 12 and a × b = 1800, then LCM(a, b) is:

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

Q29. The number of prime factors in the prime factorization of 5005 is:

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

Q30. 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
Q1: (b) $3^2 \times 5^2 \times 17$	**Q11:** (b) 4	**Q21:** (a) 300
Q2: (b) 2	**Q12:** (a) 9696	**Q22:** (a) 180 min
Q3: (d) Four decimal places	**Q13:** (c) 6	**Q23:** (c) $(\sqrt{2} - \sqrt{3})(\sqrt{2} + \sqrt{3})$
Q4: (b) $21/2^2 \times 5^3 \times 7$	**Q14:** (a) 22338	**Q24:** (c) 38
Q5: (c) 1	**Q15:** (a) Rational number	**Q25:** (b) Even but not divisible by 4
Q6: (c) Both rational and irrational numbers	**Q16:** (a) 36	**Q26:** (d) None
Q7: (b) 5	**Q17:** (d) 216	**Q27:** (b) 4
Q8: (b) 6	**Q18:** (b) Always irrational	**Q28:** (a) 150
Q9: (b) Irrational number	**Q19:** (c) 2	**Q29:** (b) 4
Q10: (a) $2^2 \times 3 \times 13$	**Q20:** (d) 4	**Q30:** (b) 1