



VIDYA BHARATI SCHOOL
OLYMPIAD WORKSHEET: Apr- 2017
GRADE: X
SUBJECT: MATHEMATICS

1. The exponent of 2 in the prime factorization of 144 is
a) 4 b) 5 c) 6 d) 3
2. If $n=2^3 \times 3^4 \times 4^4 \times 7$, then the number of consecutive zeros in n , where n is a natural number is
a) 2 b) 3 c) 4 d) 7
3. If P_1 and P_2 are two odd prime numbers such that $P_1 > P_2$ then $P_1^2 - P_2^2$ is
a) an even number b) an odd number c) an odd prime number d) a prime number
4. 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
5. If P and q are co-prime numbers then P^2 and q^2 are
a) prime b) not co-prime c) odd d) even
6. The smallest number by which $\sqrt{27}$ should be multiplied so as to get a rational number is
a) $\sqrt{27}$ b) $3\sqrt{3}$ c) $\sqrt{3}$ d) 3
7. If n is a natural number, then $9^{2n} - 4^{2n}$ is always divisible by
a) 5 b) 13 c) both 5 and 13 d) none
8. The LCM and HCF of two rational Number are equal, then the Numbers must be
a) Prime b) co-prime c) composite d) Equal
9. The remainder when the Square of any Prime number greater than 3 is divided by 6 is
a) 1 b) 3 c) 2 d) 4
10. If p, q are two consecutive natural numbers then HCF (pq) is
a) q b) 3 c) $2p$ d) pq

11. If p, q are two prime numbers then LCM of p, q is
 a) 1 b) p c) q d) pq
12. Euclid's division Algorithm can be applied to
 a) only positive integers b) only negative integers c) all integers d) all integers except 0
13. For some integer m every even integer is of the form
 a) m b) $m+1$ c) $2m$ d) $2m+1$
14. n^2-1 is divisible by 8 if $n=$
 a) an integer b) a natural number c) an odd integer d) an even integer
15. The largest number which divides 70 and 125 leaving remainders 5 and 8 respectively is
 a) 13 b) 65 c) 875 d) 1750
16. The product of a non-zero rational and irrational number is
 a) Always irrational b) always rational c) rational or irrational d) one
17. The least number that is divisible by all the numbers from 1 to 10
 a) 10 b) 100 c) 504 d) 2520
18. The decimal expansion of π
 a) is terminating b) is non-terminating and repeating
 c) is non-terminating and non-repeating d) none of these
19. If $(9/7)^3 \times (49/81)^{2x-6} = (7/9)^9$ the value of x is
 a) 12 b) 9 c) 8 d) 6
20. If $m^n = 32$ where m and n are positive integers then the value of n^m is
 a) 32 b) 25 c) 510 d) 525

*For more practice material please click: www.brilliant.org; www.sofolympiadtrainer.co
www.olympiadhelper.com