

# MULTIPLE CHOICE QUESTIONS

1. Euclid's Division Lemma states that for any two positive integers  $a$  and  $b$ , there exists unique integers  $q$  and  $r$  such that  $a = bq + r$  where  $r$  must satisfy:
 

(a)  $0 < r < b$ 
(b)  $0 \leq r < b$ 
(c)  $0 < r \leq b$ 
(d)  $0 \leq r \leq b$
2. The decimal expansion of  $\frac{21}{24}$  will terminate after how many places of decimal?
 

(a) 1
(b) 2
(c) 3
(d) 4
3. Given that  $\text{HCF}(253, 440) = 11$  and  $\text{LCM}(253, 440) = 253 \times R$ . The value of  $R$  is:
 

(a) 400
(b) 40
(c) 440
(d) 253
4. The rational number of decimal number  $0.\overline{6}$  is:
 

(a)  $\frac{33}{50}$ 
(b)  $\frac{2}{3}$ 
(c)  $\frac{111}{167}$ 
(d)  $\frac{1}{3}$
5. Which of the following rational numbers have non-terminating repeating decimal expansion
 

(a)  $\frac{31}{3125}$ 
(b)  $\frac{17}{512}$ 
(c)  $\frac{23}{200}$ 
(d)  $\frac{64}{455}$
6. The product of a non-zero rational and an irrational is
 

(a) Always irrational
(b) Always rational

(c) Rational or irrational
(d) None
7. Which of the following is rational?
 

(a)  $\sqrt{6} + \sqrt{9}$ 
(b)  $\sqrt{2} + \sqrt{4}$ 
(c)  $\sqrt{4} + \sqrt{9}$ 
(d)  $\sqrt{3} + \sqrt{5}$
8. 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)  $a = bq + r, 0 < r \leq b$
9. If  $d = \text{LCM}(36, 198)$  then the value of  $d$  is:
 

(a) 396
(b) 198
(c) 36
(d) 1
10. For some integer 'a' every even integer is of the form:
 

(a)  $a + 1$ 
(b)  $2a$ 
(c)  $a$ 
(d)  $2a + 1$
11.  $2.0\overline{34}$  is:
 

(a) An Integer
(b) A rational number

(c) A Natural number
(d) An irrational number
12. Of the four numbers, which is a rational number
 

(a)  $\left(\sqrt{5} - \frac{1}{\sqrt{5}}\right)^3$ 
(b)  $2.123\overline{123}$

(c) 2.1232123...
(d)  $(\sqrt{3} - \sqrt{2})(2\sqrt{3} + \sqrt{2})$

13. When Euclid's lemma is used for  $a < b$  as  $a = bq + r$ , then which of the following is true?  
 (a)  $b = 0$  (b)  $r = 0$  (c)  $q = 0$  (d)  $a = 0$
14.  $n^2 - 1$  is divisible by 8, if  $n$  is  
 (a) an integer (b) a natural number  
 (c) an odd integer (d) an even integer
15. If two positive integers  $a$  and  $b$  are written as  $a = x^5y^2$  and  $b = x^2y^3$  ( $x$  and  $y$  are prime numbers) then HCF ( $a, b$ ) is  
 (a)  $xy$  (b)  $x^5y^3$  (c)  $x^3y^3$  (d)  $x^2y^2$
16. The product of two consecutive integers is divisible by  
 (a) 2 (b) 3 (c) 5 (d) 7
17. The decimal expansion of  $\frac{43}{2^4 \times 5^3}$  will terminate after  
 (a) one decimal place (b) two decimal places  
 (c) three decimal places (d) more than three decimal places
18. 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
19. There are 576 boys and 448 girls in a school that are to be divided into equal sections of either boys or girls alone. The total number of sections thus formed is:  
 (a) 22 (b) 16 (c) 36 (d) 42
20. Which one of the following is an irrational number?  
 (a) 0.371371371... (b) 2.39  
 (c) 4.010010001... (d) 2.4
21. If  $p, q$  are two prime numbers, then LCM ( $p, q$ ) is  
 (a) 1 (b)  $p$  (c)  $q$  (d)  $pq$
22. If HCF of 65 and 117 is expressible in the form  $65m - 117$ , then the value of  $m$  is  
 (a) 1 (b) 2 (c) 3 (d) 4
23. The largest number which divides 125 and 70, leaving remainders 8 and 5 respectively, is  
 (a) 1750 (b) 850 (c) 65 (d) 13
24. The reciprocal of an irrational number is  
 (a) an integer (b) rational  
 (c) a natural number (d) irrational
25. If ' $a$ ' and ' $b$ ' are co-prime, then  $a^2$  and  $b^2$  are  
 (a) coprime (b) not coprime (c) odd numbers (d) even numbers
26. The product of three consecutive integers is divisible by  
 (a) 5 (b) 6 (c) 7 (d) 11
27. How many prime factors are there in the prime factorisation of 5005?  
 (a) 2 (b) 4 (c) 6 (d) 7

28. The number  $(\sqrt{2} + \sqrt{3})^{10} (\sqrt{2} - \sqrt{3})^{10}$  is a

(a) rational number

(b) irrational number

(c) prime number

(d) negative number

29. 'a' and 'b' are two +ve integers, where  $a > b$  and 'b' is a factor of 'a', then HCF (a, b) is

(a) b

(b) a

(c) ab

(d)  $\frac{a}{b}$

### Answers:

1. (b)

2. (c)

3. (b)

4. (b)

5. (d)

6. (a)

7. (c)

8. (c)

9. (a)

10. (b)

11. (b)

12. (b)

13. (c)

14. (c)

15. (d)

16. (a)

17. (d)

18. (d)

19. (b)

20. (c)

21. (d)

22. (b)

23. (d)

24. (d)

25. (a)

26. (b)

27. (b)

28. (a)

29. (a)