

Class: 6
Subject: Mathematics
Topic: Playing with numbers
No. of Questions: 20
Duration: 60 Min
Maximum Marks: 60

Q.1 Which of the following numbers is divisible by 6?

- a) 67821 b) 78134 c) 1258 d) 297144

Solution: d) 297144

[Hint: If a number is divisible by both 2 and 3 then it is divisible by 6 also.]

Q.2 The LCM of two co-prime numbers is their

- a) Sum b) Difference c) Product d) Quotient

Solution: c) Product

[Explanation: The LCM of 2 co-prime numbers is their product
E.g., LCM of 5 and 9= $5 \times 9=45$]

Q.3 Which of the following is a prime number?

- a) 143 b) 131 c) 147 d) 161

Solution: b) 131

[Explanation: 131 has exactly 2 factors, i.e., 1 and 131

Therefore, it is a prime number.

143 is divisible by 11, 147 is divisible by 7 and 161 is divisible by 7]

Q.4 Find the least 5-digit number which is exactly divisible by 20,25, 30?

- a) 10000 b) 10500 c) 10200 d) None of these

Solution: c) 10200

[Explanation: To find the least number which is exactly divisible by 20, 25, 30, we have to calculate the LCM of 20,25,30.

LCM of 20,25,30=300

But this is a 3-digit number

So, to get a 5-digit number 300 should be multiplied with 34

$300 \times 34=10200$]

Q.5 Three bells toll together at intervals of 9,12,15 minutes. If they start tolling together, after what time will they next toll together?

- a) 1 hour b) $1\frac{1}{2}$ hour c) $2\frac{1}{2}$ hour d) 3 hours

Solution: d) 3 hours

[Explanation: We have to find out the LCM of 9,12,15 which comes out to be 180.

So, the 3 bells toll together after 180 minutes which is equal to 3 hours.]

Q.6 In a morning walk, three boys step off together. Their steps measure 80cm, 85cm and 90cm respectively. What minimum distance should each walk so that all can cover the distance in complete steps?

- a) 61200cm b) 12240cm c) 7200cm d) None of these

Solution: b) 12240cm

[Hint: To calculate the required distance, find out the LCM of 80,85 and 90]

Q.7 Which of the following numbers is divisible by 11?

- a) 3333333 b) 1111111 c) 2222222 d) None of these

Solution: c) 2222222

[Explanation: On applying the divisibility rule of 11,

We get, sum of odd terms=8 and sum of even terms=8

Difference= 8-8=0, which is divisible by 11]

Q.8 The product of two numbers is 2160 and their HCF is 12. Find the LCM.

- a) 160 b) 180 c) 2148 d) 2172

Solution: b) 180

[Explanation: Product of numbers= HCF x LCM

2160= 12 x LCM

LCM= 2160/12= 180]

Q.9 Which of the following are co-prime?

- a) 39, 91 b) 161, 192 c) 385, 462 d) None of these

Solution: b) 161, 192

[Hint: Find the HCF of the numbers as HCF of co-prime numbers is 1]

Q.10 Which of the following is divisible by 3 but not by 9?

- a) 990 b) 3060 c) 228 d) 639210

Solution: d) 639210

[Explanation: Find the sum of digits as $6+3+9+2+1+0=21$ which is divisible by 3 but not by 9]

Q.11 Which of the following numbers are divisible by 8?

- a) 96354142 b) 37450176 c) 57064214 d) 98671402

Solution: b) 37450176

[Explanation: On applying the divisibility rule of 8, i.e., last 3 digits of the number are divided by 8, $176/8=22$ and remainder as 0
This means, 37450176 which is divisible by 8]

Q.12 Find the HCF and LCM of 25, 65

- a) 5, 325 b) 1,90 c) 325, 5 d) 90,1

Solution: a) 5, 325

[Explanation: Prime factors of 25 = 5×5
Prime factors of 65 = 13×5
LCM of 25 and 65 = $5 \times 5 \times 13 = 325$
Now, HCF = Product of numbers / LCM = $(25 \times 65) / 325 = 5$]

Q.13 Give the prime factorization of 1260

- a) $2 \times 3^2 \times 5^2 \times 7$ b) $2^2 \times 3^2 \times 5 \times 7$ c) $2^3 \times 3 \times 5 \times 7$ d) $2^2 \times 3 \times 5^2 \times 7$

Solution: b) $2^2 \times 3^2 \times 5 \times 7$

[Explanation: Prime factorization of 1260 can be calculated using division method.
 $1260 = 2 \times 2 \times 3 \times 3 \times 5 \times 7 = 2^2 \times 3^2 \times 5 \times 7$]

Q.14 Replace * by the smallest number in $27*4$ to make it divisible by 3

- a) 1 b) 3 c) 9 d) 2

Solution: d) 2

[Explanation: Sum of digits = $2+7+*+4 = 13+*$
To make it divisible by 3, the sum should be 15
Therefore, 2 must be added
Now the required number is 2724]

Q.15 Find the number which is divisible by 2 but not by 4

- a) 2856 b) 3060 c) 1586 d) 9092

Solution: c) 1586

[Explanation: According to the divisibility rule of 2, 1586 is an even number, therefore, divisible by 2. But last 2 digits, i.e., 86 is not divisible by 4
Therefore, 1586 is not divisible by 4.]

Q.16 Express 84 as sum of 2 odd primes.

- a) 17+67 b) 81+3 c) 51+33 d) 19+65

Solution: a) 17+67

[Hint: Both 17 and 67 are odd as well as prime.]

Q.17 Which of the following is the smallest prime number?

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

Solution: b) 2

[Explanation: 2 has only 2 factors, 1 and 2 itself.]

Q.18 If a number is prime, it must be odd?

- a) True b) False c) Cannot say d) None of these

Solution: b) False

[Explanation: 2 is an even and a prime number]

Q.19 Find the HCF of 24 and 32

- a) 96 b) 56 c) 8 d) None of these

Solution: c) 8

[Explanation: Factors of 24 are 1,2,3,4,6,8,12,24

Factors of 32 are 1,2,4,8,16,32

Common factors of 24 and 32 are 1,2,4,8

Highest common factor(HCF) = 8]

Q.20 289/391 when reduced to lowest terms is

- a) 11/23 b) 13/31 c) 17/31 d) 17/23

Solution: d) 17/23

[Explanation: Factors of 289= 17 x 17

Factors of 391= 23 x 17

289/391= 17/23]