Top-20 RRB NTPC LCM AND HCF Questions

Instructions

For the following questions answer them individually

Question 1

The H.C.F. and L.C.M. of, two numbers are 8 and 48 respectively. If one of the numbers is 24, then the other number is

A 48

B 36

C 24

D 16

Answer: D

Explanation:

Given:-

Numbers- First = 24

Second = x (suppose)

H.C.F. of numbers = 8

L.C.M. of numbers = 48

As we know:

H.C.F.* L.C.M. = Product of numbers

Hence

48*8 = 24*x

x = 16

Question 2

Two numbers are in the ratio 3:4. Their L.C.M. is 84. The greater number is

A 21

B 24

C 28

D 84

Answer: C

Explanation:

Let the numbers be 3x, 4x

LCM of 3x and 4x is = 12x

So the number 84 is divisible by 12

$\frac{84}{12}$ = 7

The numbers are 7x3 = 21 , 7x 4 = 28

The greatest number is 28

Question 3

The sum of two numbers is 36 and their H.C.F and L.C.M. are 3 and 105 respectively. The sum of the reciprocals of two numbers is

A 2/35

B 3/25

C 4/35

D 2/25

Answer: C

Explanation:

let's say numbers are x and y

hence sum of the reciprocals will be $\frac{1}{x} + \frac{1}{y}$

or $\frac{x+y}{xy}$

as $x + y$ = 36 (given)

and $xy = HCF \times LCM$

$= 3 \times 105 = 315$

after putting the values we will get summation of reciprocals equals to $\frac{4}{35}$

Question 4

L.C.M. of two numbers is 120 and their H.C.F. is 10. Which of the following can be the sum of those two numbers?

A 140

B 80

C 60

D 70

Answer: D

Explanation:

We assume that numbers are hr_1 and hr_2 (where h= H.C.F. of numbers and r_1 and r_2 are prime factors)

So L.C.M. will be = hr_1r_2 = 120

or r_1r_2 = 12

So r_1 =4 and r_2 = 3 ; numbers will be 40 and 30, sum is 70

or r_1 = 12 and r_2 = 1 ; numbers will be 120 and 10, sum is 130

Hence only option D justifies.

Question 5

Product of two coprime numbers is 117. Then their LCM is

A 9

B 13

C 39

D 117

Answer: D

Explanation:

Let the two numbers be a,b.

Hence a * b = L.C.M(a,b) * G.C.D(a,b)

It is given that a,b are co-primes, implies G.C.D(a,b) = 1

Hence from the above equation we get L.C.M(a,b) = a*b = 117

Question 6

HCF and LCM of two numbers are 11 and 825 respectively. If one number is 275 find the other number.

A 53

B 45

C 33

D 43

Answer: C

Explanation:

Let the number = x

HCF = 11 and LCM = 825

Product of HCF and LCM = Product of the two numbers

=> $x \times 275 = 11 \times 825$

=> $x = \frac{11 \times 825}{275}$

=> $x = \frac{825}{25} = 33$

=> Ans - (C)

Question 7

What is the LCM (least common multiple) of 57 and 93?

A 1767

B 1567

C 1576

D 1919

Answer: A

Explanation:

Prime factorization of 57 = 3 $\times$ 19

Prime factorization of 93 = 3 $\times$ 31

=> L.C.M. of 57 and 93 = 3 $\times$ 19 $\times$ 31

= 57 $\times$ 31 = 1767

=> Ans - (A)

Question 8

What is the HCF (highest common factor) of 57 and 513?

A 10

B 57

C 3

D 27

Answer: B

Explanation:

Factors of 57 = 1 , 3 , 19 , 57

Factors of 513 = 1 , 3 , 9 , 19 , 27 , 57 , 171 , 513

The common factors are = 1 , 3 , 19 , 57

=> Highest common factor = 57

=> Ans - (B)

Question 9

The two numbers are 63 and 77, HCF is 7, Find the LCM.

A 668

B 693

C 674

D 680

Answer: B

Explanation:

H.C.F. (a,b) $\times$ L.C.M. (a,b) = $a \times b$

The numbers a = 63 and b = 77 and HCF = 7

=> L.C.M. = $\frac{a \times b}{HCF}$

= $\frac{63 \times 77}{7} = 63 \times 11$

= 693

Question 10

What is the HCF (highest common factor) of 77 and 275?

A 12

B 11

C 7

D 25

Answer: B

Explanation:

Factors of : 77 = 1 , 7 , 11 , 77

275 = 1 , 5 , 11 , 25 , 55 , 275

The common factors are 1 and 11

and HCF = 11

=> Ans - (B)

Question 11

The two numbers are 55 and 99, HCF is 11, What is their LCM?

A 486

B 479

C 476

D 495

Answer: D

Explanation:
Let the LCM = x

Numbers are = 55 , 99

Also, product of numbers = HCF $\times$ LCM

=> $55 \times 99 = 11 \times x$

=> $x = {}^{55\times99}_{11} = 5 \times 99$

=> $x = 495$

=> Ans - (D)

Question 12

What is the HCF (highest common factor) of 133 and 112?

A 15

B 7

C 19

D 16

Answer: B

Explanation:
Prime factorization of

133 = 7×19

112 = $2^4 \times 7$

There is only 1 common factor, and thus the HCF (highest common factor) = 7

=> Ans - (B)

Question 13

What is the LCM of 64 and 56?

A 448

B 488

C 484

D 408

Answer: A

Explanation:
(diagram)

so LCM of 64 & 56 is = 8*8*7 = 448

So the answer is option A.

Question 14

The LCM of two numbers is 4 times their HCF. The sum of LCM and HCF is 125. If one of the numbers is 100, then the other number is

A 5

B 25

C 100

D 125

Answer: B

Explanation:

Let one of the numbers = x and other number = 100

Let L.C.M = L and H.C.F = H

According to ques, => $L = 4H$ ----------(i)

and $L + H = 125$

Substituting value from equation (i), we get : $4H + H = 5H = 125$

=> $H = {}^{125}_{5} = 25$

=> $L = 4 \times 25 = 100$

Thus, product of numbers = $L \times H$

=> $100 \times x = 100 \times 25$

=> $x = 25$

=> Ans - (B)

Question 15

The sum of two numbers is 7 and the sum their squares is 23, their product is equal to:

A 10

B 11

C 12

D 13

Answer: D

Explanation:

Let the numbers be x and y

It is given that $x^2 + y^2 = 23$ ----------(i)

Also, $x + y = 7$

Squaring both sides, we get :

=> $x^2 + y^2 + 2xy = 49$

=> $23 + 2xy = 49$

=> $2xy = 49 - 23 = 26$

=> $xy = {}^{26}_{2} = 13$

∴ Product of the numbers = **13**

=> Ans - (D)

RRB Group-D Previous Papers

Question 16

The difference between two numbers is 1146. When we divide the larger number by smaller we get 4 as quotient and 6 as remainder. Find the larger number.

A 1526

B 1431

C 1485

D 1234

Answer: A

Explanation:

Let the smaller number be x and the larger number = $(x + 1146)$

According to ques, on dividing the larger term by smaller one,

=> $(x + 1146) = 4x + 6$

=> $4x - x = 1146 - 6$

=> $3x = 1140$

=> $x = {}^{1140}_{3} = 380$

$\therefore$ Larger number = $380 + 1146 = 1526$

=> Ans - (A)

Question 17

The number between 4000 and 5000 that is divisible by each of 12, 18, 21 and 32 is

A 4302

B 4032

C 4023

D 4203

Answer: B

Explanation:

LCM of 12,18,21,32 is 2016

Multiples of 2016 between 4000 and 5000 are 4032.

4032 is present in the options.

Hence, option B is the correct answer.

Question 18

A number between 1000 and 2000 which when divided by 30, 36 & 80 gives a remainder 11 in each case is

A 1451

B 1641

C 1712

D 1523

Answer: A

Explanation:
LCM of given 3 numbers (30, 36, 80) = 720

Multiple of 720 between 1000 and 2000 is 1440.

∴ Number which gives a remainder 11 in each case (1440 + 11) = 1451

Hence, option A is the correct answer.

Question 19

The product of two numbers is 2160 and their HCF is 12. Numbers of such possible pairs is

A 1

B 2

C 3

D 4

Answer: B

Explanation:
H.C.F. of the two numbers is 12, let the numbers be $12x$ and $12y$, where x and y are co-prime

Product = $(12x) \times (12y) = 2160$

= $xy = \frac{2160}{144}$

=> $xy = 15$

Now, factors of 15 = 1, 3, 5, 15

Thus, possible values of $(x, y) = (1, 15), (3, 5)$

∴ **2** such pairs are possible.

=> Ans - (B)

Question 20

The HCF of two numbers 24 and their LCM is 216. If one of the number is 72, then the other number is

A 27

B 72

C 8

D 24

Answer: B

Explanation:
Let the number be a and other number = $b = 72$

We know that : $H.C.F(a, b) \times L.C.M.(a, b) = a \times b$

=> $a \times 72 = 24 \times 216$

=> $a = \frac{24 \times 216}{72}$

=> $a = 24 \times 3 = 72$

=> Ans - (B)