NUMBER SYSTEM ASSIGNMENT 1

Question1- Find number of even divisors of 5040.

Question2- N=2^5*3^4*5^2

a) Find number of total divisors

b) Find number of even divisors

c) Find number of odd divisors

Question3- N=2^5*3^4*5^2

a) Number of divisors whose unit digit is 5

b) Find number of divisors which is divisible by 10

c) Find number of divisors which is divisible by 6

Question4- how many divisors of 21600 are perfect square?

Question5- find number of divisors of form 4n+2 ((n>=0)) of 240

Question6- Find the no. of divisors of 1080 excluding the divisors which are perfect squares

Question7- How many divisors of 360 are not divisors of 540 ?

Question8- How many divisors does 62(63^3 + 63^2 +63 +1) +1 have

Question9- Find all number less than 100 which has exactly a) 8 divisors b) largest number with 8 divisors ((number less than 100))

Question10-Let N denote the smallest positive integer which has exactly 200 divisors ,Find N .

Question11- On the board there were written the positive divisors of 30^19. Vineet cleaned the ones that were also divisors of 20^11. How many numbers are still on the board.

Question12- What is the smallest positive odd integer having the same number of positive divisors as 360

Question13- how many divisors of 46410 are not divisible by 15?

Question14- What is the sum of the number less than 119 that have exactly 5 divisors

Question15- Find the largest prime divisor of 49^2 + 72^2

Question16- Find sum of all factors of 200

Question17- Out of the first 200 even natural numbers. How many even numbers exist having even number of factors?

Question18- The positive integer N has exactly six distinct integer divisors inclusing 1 and N. The product of five of these is 648. Which of the following must be a divisor of N

a. 4 b.9 c.12 d.16 e.24

Question19- How many natural numbers are factors of 540 but not a factor of 720?

Question20- All the factors of N are arranged in increasing order then product of 12th and 25th factors is equal to N. Find the number of factors of N.

Question21- Which factor will occupy the 68th position if all the factors of 6^2 *5^2 *14^2 are written in ascending order ?

Question22- The sum of 6 natural numbers (not necessarily distinct) is 23. Let M denote the positive difference of the maximum and minimum of the LCM of these 6 numbers. Then total number of divisors that divide M^2 but doesn't divide M are

ANSWER KEY

Answer1- 48

Answer 2- 90, 75 ,15

Answer3- 10, 50 ,60

Answer4- 12

Answer5- 4

Answer 6 -28

Answer7- 6

Answer8- 45

Answer9- 10, 95

Answer10- 2^4*3^4*5*7*11

Answer11- 7760

Answer12- 3465

Answer 13- 48

Answer14- 97

Answer15- 41

Answer16- 465

Answer17- 190

Answer18- 9

Answer19-6

Answer20- 36

Answer21-420

Answer22- 33