NUMBER SYSTEM

Q1. A number when divided by a divisor leaves a remainder of 24. When twice the original number is divided by the same divisor, the remainder is 11. What is the value of the divisor?

   a) 13   b) 59   c) 35   d) 37

Q2. The product of 4 consecutive even numbers is always divisible by:

   a) 600   b) 768   c) 864   d)384

Q3. Find the remainder when 2^{89} is divided by 89?

   a) 1   b)2   c) 87   d) 68

Q4. What is the remainder when $3^7$is divided by 8?

   a) 1   b) 2   c) 3   d) 4

Q5. The LCM of two numbers is 280 and their ratio is 7:8. The two numbers are

   a) 70,80   b) 35,40   c) 42,48   d) 28,32

Q6. What is the remainder when 7^{187} is divided by 800?

   a) 143   b) 243   c) 343   d) 443

Q7. A certain number when divided by 222 leaves a remainder 35, another number when divided by 407 leaves a remainder 47.What is the remainder when the sum of these two numbers is divided by 37?

   a) 8   b) 9   c)12   d) 17

Q8. If $N=2^3\times3^4$, $M=2^2\times3\times5$, then find the number of factors of N that are common with the factors of M.

   a) 8   b) 6   c)18   d) 20

Q9. What is the remainder left after dividing 1!+2!+3!.....+100!by 7 ?

   a) 1   b) 5   c)11   d) 13

Q10. The number 3072 is divisible by both 6 and 8.Which one of the following is the first integer larger than 3072 that is also divisible by both 6 and 8?

       a) 3084   b) 3086   c) 3090   d) 3096

Q11. The numbers 1 to 29 are written side by side as follows 1234567891011......2829. If the number is divided by 9, then what is the remainder?

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

Q12. How many zeroes will be there in the expansion of the expression

$1^1\times2^2\times3^3\times4^4$........$\times100^{100}$
   a) 1200   b)1232   c) 1300   d) 1320

Q13. If a and b are positive integers, and x=2×3×7×a , and y=2×2×8×b , and the values of both x and y lie between 120 and 130 (not including the two), then a–b=

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

Q14. The least common multiple of two natural numbers a and b, is 399. What is the minimum possible sum of the digits of the number a(given a>b)?
   a) 1   b)3   c)5   d)7

Q15. Let n be the number of different 5 digit numbers, divisible by 4 with the digits 1, 2, 3, 4, 5 and 6, no digit being repeated in the numbers. What is the value of n?
   a) 144   b) 168 c) 192   d)none of these

Q16. How many three digit numbers can be formed using the digits 1,2,3,4,5,6,7 and 8without repeating the digits and such that the tens digit is greater than the hundreds digit and less than the units digit?

   a) 48   b) 56   c) 64   d) 72

Q17 a, b, c, d and e are five consecutive numbers in increasing order of size. Deleting one of the five numbers from the set decreased the sum of the remaining numbers in the set by 20%. Which one of the following numbers was deleted?

   a) a   b) b   c) c   d) d   e) e

Q18. Let $x = 0.abcdabcdabcd\ldots\ldots$, where a, b, c and d are non-zero digits. If x is multiplied by a certain natural number D, then the result is also a natural number. Which of the following is a possible value of D?

A] 99999   B] 9990   C] 69993   D] None of these

Q19. 16. What is the remainder when $222^{555} + 555^{222}$is divided by 7.

A] 2   B] 0   C] 3   D] None of these

Q20. 18. If $N = 5 \times 10 \times 15 \times 20 \times 25 \times\ldots\ldots \times 200$, the number of zeroes at the end of N is
A] 49   B] 38   C] 40   D] 28