

# ELITES GRID

NUMBER SYSTEM 4 (REMAINDER ASSIGNMENT )

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**Q1.** Find last 2 digits of  $(201*202*203*204*246*247*248*249)^2$

**Q2-** Find the remainder when  $17^{49}$  divided by 101.

**Q3-**  $3^{2013}$  divided by 8 .What is the remainder ?

**Q4-** what is the remainder when  $2^{222}$  is divided by 22

**Q5-** Find the remainder when  $3^{99}$  is divided by 99.

**Q6-** What is the remainder when  $3^{100,000}$  is divided by 53.

**Q7-** find the remainder when  $1!+2!+3!+.....+175!$  is divided by 15.

**Q8-** Find the last three digits of  $243^{81}$ .

**Q9-**What is the remainder when  $8^{\{101\}} + 4^{\{101\}} + 2^{\{101\}} + 1$  is divided by  $2^{\{100\}} - 1$  ?

**Q10-** Let a, b, c, d, e, f be positive integers such that  $a+b+c+d+e+f = 240$ . Let P be the maximum value of abcdef. Find the remainder when P is divided by 7 .

**Q11-** What is the remainder upon dividing the sum  $2!+4!+6!+\dots+2008!+2010!$  by 5?

**Q12-** Find the remainder when  $[(45!)/23]$  is divided by 23.

**Q13-** What is the remainder when  $99^{999}$  is divided by 12.

**Q14-** Find Remainder when  $26^{27}$  is divided by 29

**Q15-** Find the 2014th digit after the decimal point of the decimal expansion of the repeating decimal  $2/13$

**Q16-** Find the remainder when  $7^{(8^9)}$  is divided by 1000.

**Q17-** If 792 divides  $13xy45z$ , find the digits x,y and z.

**Q18-** What is the remainder when  $709!$  is divided by 719?

**Q19-** What is the remainder when  $52^{52}$  is divided by 100?

**Q20-** find the remainder of  $2^{333}$  is divided by 33

# **ANSWER KEYS**

**BEFORE CHECKING ANSWER KEYS – TRY QUESTIONS ATLEAST 2-3 TIMES**

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- 1) 76      2) 6      3) 3      4) 4      5) 81  
6) 28      7) 3      8) 243      9) 15      10) 1  
11) 1      12.) 1      13) 3      14) 17      15.) 8  
16.) 801      17)  $x = 8, y = 0$  and  $z = 6$ ?      18) 515      19) 96  
20) 8