**Q1.** 53= 125 As we know, ab = c ⇒ =a; Therefore, Log5125 = 3

**Q2.** 32 = x 4x = 32 (22)x = 2x2x2x2x2 22x = 25 2x=5 x= Therefore, 32 =

**Q3.** log(x-1)+log(x+1)=1; log(x-1)+log(x+1)=0; log[(x-1)(x+1)]=0 Since, log1 = 0 (x-1)(x+1) = 1 x2-1=1 x2=2 x=±2 Since, log of negative number is not defined. Therefore, x=2

**Q4.** Using the third formula,. All the irrational logarithms cancel out, leaving the answer **12**.

**Q5.** Since , . Using the first formula, . The remainder when is divided by is **519**.