

# ANGEL'S PUBLIC SCHOOL

## SAMPLE PAPER

PERIODIC TEST – I    SESSION 2021 – 22  
CLASS – X    SUBJECT : MATHEMATICS

TIME: 1.5 HRS

M.M: 50

### GENERAL INSTRUCTIONS:

- All questions are compulsory.
- The question paper consists of 22 questions divided into four sections A, B, C and D.
- Section A comprises 7 questions of 1 mark each.
- Section B comprises 6 questions of 2 marks each.
- Section C comprises 5 questions of 3 marks each.
- Section D comprises 4 questions of 4 marks each.
- There is no overall choice.

### SECTION – A

**Q1.** Given that  $HCF(306, 657) = 9$ , find the  $LCM(306, 657)$ .

**Q2.** Explain division algorithm or Euclid division lemma with the help of an example .

**Q3.** Write whether the following pair of linear equations is consistent or not.

$$2x - 3y = 8$$

$$4x - 6y = 9$$

**Q4.** At what point will the line represented by  $x - y = 8$  intersect  $y - axis$  .

**Q5.** Determine whether the fraction  $\frac{6}{15}$  has a terminating decimal expansion or non – terminating decimal expansion.

**Q6.** The difference between the two numbers is 26 and one number is three times the other. Find the numbers.

**Q7.** Express the number 7429 as the product of prime factors.

### **SECTION – B**

**Q8.** Find the quadratic polynomial whose zeroes are  $-3$  and  $2$ .

**Q9.** Prove  $3 + 2\sqrt{5}$  is an irrational number.

**Q10.** Find the LCM and the HCF of 6, 72 and 120 by prime factorization method.

**Q11.** A fraction becomes  $\frac{9}{11}$  if 2 is added to both numerator and denominator.

If 3 is added to both numerator and denominator it becomes  $\frac{5}{6}$  find the fraction by substitution method

**Q12.** Check whether  $6^n$  can end with digit 0 for any natural number  $n$ .

**Q13.** Find the HCF of 1620, 1725 and 255 by Euclid lemma.

### **SECTION – C**

**Q14.** Show that every positive even integer is of the form  $2q$ , and that every positive odd integer is of the form  $2q + 1$ , where  $q$  is some integer.

**Q15.** The HCF of 480 and 685 is expressed in the form  $480x - 475$ , find the value of  $x$ .

**Q16.** Solve for  $x$  and  $y$ , using the Elimination method.

$$2x + 3y = 46$$

$$3x + 5y = 74$$

**Q17.** Two bells ring at the intervals of 78 seconds and 46 seconds. If they both ring at 10 O'clock in the morning together, after how many seconds will they ring together again?

**Q18.** For what value of  $k$ , does the pair of equations given below has a unique solution?

$$y - x = 6$$

$$3kx + 2y = 7$$

### SECTION - D

**Q19.** Obtain all other zeroes of  $3x^4 + 6x^3 - 2x^2 - 10x - 5$ , if two of its zeroes are  $\sqrt{\frac{5}{3}}$  and  $-\sqrt{\frac{5}{3}}$

**Q20.** If 0.3528 is expressed in the form  $\frac{p}{2^m 5^n}$ ,

then find the smallest value of  $m, n, p$ .

**Q21.** If  $\alpha, \beta$  are the zeroes of  $kx^2 + 4x + 4$  such that  $\alpha^2 + \beta^2 = 24$ . Find the value of  $k$ .

**Q22.** 5 years ago, Nuri was thrice as old as Sonu. 10 years later, Nuri will be twice as old as Sonu. How old are Nuri and Sonu now?