

Date 10-05-2016

Time- 40 min

M .Marks- 20

Maths–Test 3

Class10<sup>th</sup>

CBSE



**Two Marks Each**

1. Find the HCF of 81 and 237 by Euclid's division lemma method.
2. Prove that  $\sqrt{2} + \sqrt{5}$  is irrational.
3. Without actually performing the long division, state whether the following rational numbers will have a terminating decimal expansion or a non-terminating repeating decimal expansion :  $\frac{15}{1600}$
4. If one root of the polynomial  $f(x) = 4x^2 - 8kx - 9$  is negative of the other, find the value of k.

**Three Marks Each**

5. Show that  $n^2 - 1$  is divisible by 8, if  $n$  is an odd positive integer.
6. Prove that  $n^2 - n$  is divisible by 2 for every positive integer  $n$ .
7. Prove that  $\sqrt{5}$  is an irrational number.
8. If  $\alpha$  and  $\beta$  are the zeros of the quadratic polynomial  $f(x) = x^2 - x - 4$ , find the value of  $\frac{1}{\alpha} + \frac{1}{\beta} - \alpha\beta$ .