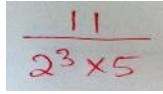


**Class : X**  
**Subject : MATHEMATICS**

**Time: 1Hr**  
**Max marks: 40**

**SECTION 1**      **10×1=10 m**



A handwritten fraction  $\frac{11}{2^3 \times 5}$  is shown in red ink on a grey background.

1. The decimal representation of **Wii**

- a) terminate after 1 decimal place
- b) terminate after 2 decimal place
- c) terminate after 3 decimal place
- d) not terminate

2. The product of non zero rational and irrational is :

- a) always irrational
- b) always rational
- c) rational or irrational
- d) one

3. Which of the following is not irrational?

- (a)  $(3 + \sqrt{7})$
- (b)  $(3 - \sqrt{7})$
- (c)  $(3 + \sqrt{7})(3 - \sqrt{7})$
- (d)  $3\sqrt{7}$

4. The addition of a rational number and an irrational number is equal to:

- (a) rational number
- (b) Irrational number
- (c) Both
- (d) None of the above

5. Euclid's division lemma states that for two positive integers a and b, there exist unique integers q and r such that  $a = bq + r$ , where r must satisfy

- (a)  $1 < r < b$
- (b)  $0 < r \leq b$
- (c)  $0 \leq r < b$
- (d)  $0 < r < b$

6. What is the quadratic polynomial whose sum and the product of zeroes is  $\sqrt{2}$ ,  $\frac{1}{3}$  respectively?

- (a)  $3x^2 - 3\sqrt{2}x + 1$
- (b)  $3x^2 + 3\sqrt{2}x + 1$
- (c)  $3x^2 + 3\sqrt{2}x - 1$

(d) None of the above

7. The degree of the polynomial,  $x^4 - x^2 + 2$  is

(a) 2

(b) 4

(c) 1

(d) 0

8. A polynomial of degree  $n$  has:

(a) Only one zero

(b) At least  $n$  zeroes

(c) More than  $n$  zeroes

(d) At most  $n$  zeroes

9 A quadratic polynomial, whose zeroes are  $-3$  and  $4$ , is

(a)  $x^2 - x + 12$

(b)  $x^2 + x + 12$

(c)  $(x^2/2) - (x/2) - 6$

(d)  $2x^2 + 2x - 24$

10. If a pair of linear equations is consistent, then the lines are:

(a) Parallel

(b) Always coincident

(c) Always intersecting

(d) Intersecting or coincident

**SECTION 2** **6×2=12m**

11. Does the polynomial  $2x^2 - 5x^2 + 3$  have real zeroes?

**Or**

The lines  $2x + y = 3$  ,  $4x + 2y = 6$  are ?

12. factorise  $4x^2 - 3x - 1$

13. Product of the two numbers is 180 and their H.C.F is 3 find their L.C.M

**Or**

Find H.C.F of 28 and 144 by Euclid Lemma

14. If the sum of the zeroes of the quadratic polynomial  $3x^2 - kx + 6$  is 3 then find the value of  $k$

15. For what values of  $k$  , the pair of linear equations  $3x + y = 3$  ,  $6x + ky = 8$  ,  
does not have a solution

**Or**

Find a line equation which is parallel to  $4x + 3y = 14$

16. Given that  $\sqrt{2}$  is irrational, prove that  $5 + 3\sqrt{2}$  is irrational

17. Find the value of  $k$  such that the polynomial  $x^2 - (k+6)x + 2(2k-1)$  such that sum of the zeroes is equal to half to their product

18. Solve the following pair of linear equations by the substitution method.

(i)  $x + y = 14$   
 $x - y = 4$

19. Compute the zeroes of the polynomial  $4x^2 - 4x - 8$ . Also, establish a relationship between the zeroes and coefficients.

20. Show that square of any positive integer is in the form of  $4q$  or  $4q + 1$  for some integer  $q$

**Or**

Show that  $6^n$  cannot end with zero for any natural number  $n$

21 .prove that root 2 is irrational

22. A fraction becomes  $\frac{9}{11}$  if 2 is added to both the numerator and the denominator. If, 3 is added to both the numerator and the denominator it becomes  $\frac{5}{6}$ . Find the fraction.

**Or**

A lending library has a fixed charge for the first three days and an additional charge for each day thereafter. Saritha paid Rs.27 for a book kept for seven days, while Susy paid Rs.21 for the book she kept for five days. Find the fixed charge and the charge for each extra day.

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