

## त्रैमासिक परीक्षा, 2022-23

### MATHEMATICS – XI

1. Express  $0.25\overline{62}$  in the form  $\frac{m}{n}$ .
2. Examine,  $(\sqrt{2} + 2)^2$  is rational or irrational.
3. Express  $\frac{7}{8}$  in decimal form.
4. Find the product of  $111 \times 102$  using identities.
5. Simplify –  
(A)  $\frac{7.03 \times 7.03 - 1.17 \times 1.17}{6.66}$   
(B)  $322 \times 322 - 2 \times 322 \times 22 + 22 \times 22$
6. Simplify \_\_\_\_\_.  
(A)  $(3^2)^3$ , (B)  $4^2 \times 4^3$  (c)  $\left(\frac{11}{12}\right)^3$
7. Find the value of x for which  $s^{5x} \div 2^x = \sqrt[5]{2^{20}}$
8. Evaluate  $\sqrt[3]{125 \times 27}$
9.  $x = \frac{\sqrt{5}-2}{\sqrt{5}+2}$ ,  $y = \frac{\sqrt{5}+2}{\sqrt{5}-2}$  find:-  
 $(x^2 + y^2 + xy) = ?$
10. If  $x = \sqrt{11 + \sqrt{8 + \sqrt{289}}}$ , find  $x = ?$
11. Find the value of  $(x + 8)(x-10)$ .

12. If  $x^2 + \frac{1}{x^2} = 27$ , find the value of  $\left(x - \frac{1}{x}\right) = ?$

13. Let  $f(x) = x^2 + 2x + 1$ ,  $g(x) = x^3 - 3x^2 + 3x + 1$  Find degree of  $f(x) \times g(x)$ .

14. Subtract the second polynomial from the first :-

(A)  $x^2 + x + 1$ ,  $1 - x - x^2$

(B)  $3x^7 - 2x^2 + 3$ ,  $x^6 - 3x^4 + x^2 + x$

15. If  $P(x) = 2x^2 + 3x + 1$  and  $g(x) = 0$  then find the value of  $p(x) \times g(x)$

16. Find the quotient and remainder of <https://www.upboardonline.com>

(i)  $f(x) = 5x^2 + 3x + 1$ ,  $g(x) = 2x$

(ii)  $f(x) = 2x^3 - 3x + 5$ ,  $g(x) = x - a$

17. factorize the following polynomials :-

(A)  $8x + 12y$

(B)  $a^3 - a^2$

(C)  $3a^2b + 10ab^2$

(D)  $\frac{49x^2}{32} - \frac{25}{18}$

(E)  $5x^2 - 32x + 12$

(F)  $8(x+2)^2 + 2(x+2) - 15$

(G)  $(3x - 4)^2 - (3x - 4) - 42$

(H)  $x^2 - x + \frac{1}{4}$

(I)  $P^2 + 5P + \frac{25}{4}$