



# MARGSHREE CLASSES PVT. LTD.

## IIT-JEE / NEET / FOUNDATION (IX & X)

Time: 2 hours

Maths

Marks: 50

(Test Paper)

NAME OF THE STUDENT:- \_\_\_\_\_

DATE:- \_\_\_\_\_

INSTRUCTION – ATTEMPT ALL QUESTIONS

- Q.1.  $3+\sqrt{5}$  is
- (a) a rational number (b) a natural number  
(c) a whole number (d) an irrational number
- Q.2. Which of the following is not an irrational number
- (a)  $3+\sqrt{5}$  (b)  $3-\sqrt{5}$  (c)  $5+\sqrt{9}$  (d)  $\sqrt{5}+9$
- Q.3. The irrational numbers can be represented in decimals as a
- (a) terminating decimal  
(b) non terminating but recurring decimals  
(c) non terminating non repeating decimals  
(d) none of these
- Q.4. Which of the following is a non-terminating repeating decimal
- (a)  $\frac{14}{35}$  (b)  $\frac{1}{7}$  (c)  $\frac{7}{8}$  (d)  $\frac{35}{14}$
- Q.5.  $\frac{3}{8}$  in the decimal form is
- (a) 0.125 (b) 0.375 (c) 0.0375 (d) 3.75
- Q.6. A rational number can be expressed as a terminating decimal if the denominators has factors
- (a) 2 or 5 (b) 3 or 5 (c) 2 or 3 (d) 2,3 or 5

- Q.7. Which of the following number has terminating decimal expansion?  
 (a)  $\frac{35}{43}$  (b)  $\frac{41}{2^3 5^4}$  (c)  $\frac{11}{35}$  (d)  $\frac{29}{2^2 3^4}$
- Q.8. Which of the following numbers has terminating decimal expansion?  
 (a)  $\frac{17}{2^2 \times 3^2}$  (b)  $\frac{23}{2 \times 5^2 \times 3}$  (c)  $\frac{63}{2^2 5^7 7^2}$  (d)  $\frac{441}{2^2 5^7 7^2}$
- Q.9. The decimal expansion of the rational number  $\frac{43}{2^4 5^3}$  will terminate after how many places of decimal  
 (a) 4 places (b) 3 places (c) 2 places (d) 6 places
- Q.10. The decimal expansion of the rational number  $\frac{11}{2^3 5^2}$  will terminate after  
 (a) 4 places (b) 3 places (c) 2 places (d) 6 places
- Q.11. The decimal expansion of  $\frac{131}{120}$  will terminate after how many places of decimal.  
 (a) 1 (b) 3 (c) 4 (d) will not terminate
- Q.12.  $(2+\sqrt{5})(3-\sqrt{5})$  expression is  
 (a) A rational number (b) A whole number  
 (c) An irrational number (d) A natural number
- Q.13. If  $C = \text{HCF}(48, 72)$ , then the value C is  
 (a) 36 (b) 12 (c) 48 (d) 24
- Q.14. If p, q are two co-prime numbers, then HCF (p, q) is  
 (a) p (b) q (c) 1 (d) pq
- Q.15. If p, q are two prime number, then LCM (p, q) is  
 (a) p (b) q (c) 1 (d) pq
- Q.16. Given that  $\text{LCM}(91, 26) = 182$ , then  $\text{HCF}(91, 26)$  is :  
 (a) 26 (b) 13 (c) 9 (d) 10
- Q.17.  $0.333 \dots$  in  $\frac{a}{b}$  form is  
 (a)  $\frac{1}{3}$  (b)  $\frac{1}{9}$  (c)  $\frac{2}{9}$  (d)  $\frac{4}{9}$
- Q.18. If the HCF of 65 and 117 is expressible in the form  $65m - 117$ , then the value of m is  
 (a) 4 (b) 1 (c) 2 (d) 3

- Q.19. The HCF of 96 and 104 is  
 (a) 2 (b) 8 (c) 16 (d) 4
- Q.20. The HCF of 2923 and 3239 is  
 (a) 37 (b) 47 (c) 73 (d) 79
- Q.21. The degree of the polynomial  $x^3 - 8x + 10$  is  
 (a) 2 (b) 3 (c) 1 (d) 0
- Q.22. The degree of the polynomial  $a^2x^2 + ax^2 + x + 1$  is  
 (a) 1 (b) 2 (c) 3 (d) 4
- Q.23. The zero of the polynomial  $2x + 25$  is  
 (a)  $-\frac{2}{25}$  (b)  $-\frac{25}{2}$  (c) -25 (d) -2
- Q.24. Find the remainder when  $5x^3 - x^2 + 6x - 2$  is divided by  $1 - 5x$   
 (a)  $-\frac{5}{4}$  (b)  $\frac{5}{4}$  (c)  $-\frac{4}{5}$  (d)  $\frac{4}{5}$
- Q.25. Find the remainder when  $x^3 - 4x^2 + 12x + 7$  is divided by  $x + \frac{1}{2}$   
 (a)  $-\frac{1}{8}$  (b)  $\frac{3}{8}$  (c)  $\frac{1}{8}$  (d)  $-\frac{3}{8}$
- Q.26. Find the value of K if the division of  $kx^3 + 9x^2 + 4x - 10$  by  $x + 3$  leaves a remainder -22.  
 (a)  $k=3$  (b)  $K = -3$  (c)  $K = 5$  (d)  $K = -5$
- Q.27. The polynomials  $ax^3 + 3x^2 - 13$  and  $2x^3 - 5x + a$  when divided by  $x - 2$  given the same remainder. find the value of a  
 (a)  $a = 2$  (b)  $a = 3$  (c)  $a = 1$  (d)  $a = 4$
- Q.28. The polynomial  $kx^4 + 3x^3 + 6$  when divided by  $x - 2$  leaves a remainder which is double the remainder left by the polynomial  $2x^3 + 17x + k$  when divided by  $x - 2$ . Find the value of K  
 (a) 5 (b) -5 (c) 3 (d) -3
- Q.29. find the value of K if  $(x - 3)$  is factor of  $K^2x^2 - kx - 2$   
 (a)  $-\frac{2}{3}, \frac{1}{3}$  (b)  $-\frac{2}{3}, -\frac{1}{3}$  (c)  $\frac{2}{3}, \frac{1}{3}$  (d)  $\frac{2}{3}, -\frac{1}{3}$
- Q.30. Find the value of a and b so that the polynomial  $x^3 - ax^2 - 13x + b$  has  $x - 1$  and  $x + 3$  as factors  
 (a)  $a = 3, b = 15$  (b)  $a = -3, b = 15$  (c)  $a = 3, b = -15$  (d)  $a = -3, b = -15$

- Q.31. What must be subtracted from  $4x^3 + 16x^2 - x + 5$  to obtain a polynomial which is exactly divisible by  $x + 5$ ?
- (a) 90                      (b) -90                      (c) 45                      (d) -45
- Q.32. Find the value of  $a$  so that  $(x+1)$  may be a factor of  $2x^2 - ax^2 - (2a - 3)x + 2$
- (a) 3                      (b) 4                      (c) -3                      (d) -4
- Q.33. Factors of  $4a^2 + 12ab + 9b^2$
- (a)  $(2a - 3b)^2$                       (b)  $(-2a + 3b)^2$                       (c)  $(3a + 2b)^2$                       (d)  $(2a + 3b)^2$
- Q.34. Factors of  $a^2 - 2ab + b^2 - a + b$  are
- (a)  $(a+b)(a-b-1)$                       (b)  $(a-b)(a+b-1)$                       (c)  $(a-b)(a-b-1)$                       (d)  $(a+b)(a+b+1)$
- Q.35. Factors of  $25x^2 + 10xy + y^2 - z^2$  are
- (a)  $(5x + y + z)(5x + y - z)$                       (b)  $(5x + y + z)^2$   
(c)  $(5x + y - z)^2$                       (d) none of these
- Q.36. Factors of  $81 - 16x^2$  are
- (a)  $(9 + 4x)^2$                       (b)  $(9 - 4x)^2$                       (c)  $(9+4x)(9-4x)$                       (d) None of these
- Q.37. Factors of  $5 - 20x^2$  are
- (a)  $5(1 + 2x)^2$                       (b)  $5(1+2x)(1-2x)$                       (c)  $5(1-2x)^2$                       (d) none of these
- Q.38. Factors of  $a^4 + 3a^2 + 4$  are
- (a)  $(a^2 + 2a + 2)^2$                       (b)  $(a^2 + 2a + 2)(a^2 - 2a + 2)$   
(c)  $(a^2 - 2a + 2)^2$                       (d) None of these
- Q.39. Factors of  $x^2 - 21x + 90$  are
- (a)  $(x + 6)(x - 15)$                       (b)  $(x - 6)(x + 15)$                       (c)  $(x + 6)(x + 15)$                       (d)  $(x - 6)(x - 15)$
- Q.40. Factors of  $a^6 - b^6$  are
- (a)  $(a + b)^2(a - b)^2$                       (b)  $(a + b)(a - b)(a^2 + ab + b^2)$   
(c)  $(a + b)(a - b)(a^2 - ab + b^2)^2$                       (d)  $(a + b)(a^2 - ab + b^2)(a - b)(a^2 + ab + b^2)$