

# VISHESH ACADEMY OF COMMERCE

DSS-33, OLD COURT COMPLEX NEAR FAWARA CHOWK HISAR

BUSINESS MATHS AND LOGICAL REASONING & STATISTICS

CA FOUNDATION

TEST –CHAPTER-2 EQUATIONS

TIME: 1 Hrs.

Marks: 30

1. On solving  $\sqrt{\frac{x}{1-x}} + \sqrt{\frac{1-x}{x}} = 2\frac{1}{6}$ , we get one value of x as:

- (a)  $\frac{4}{13}$  (b)  $\frac{1}{13}$   
(c)  $\frac{2}{13}$  (d)  $\frac{3}{13}$

2. Find the positive value of k for which the equations :  $x^2 + kx + 64 = 0$  and  $x^2 - 8x + k = 0$  will have real roots :

- (a) 12 (b) 16  
(c) 18 (d) 22.

3. A man sells 6 radios and 4 televisions for Rs. 18,480. If 14 radios and 2 televisions are sold for the same amount, what is the price of a television?

- (a) Rs. 1,848 (b) Rs. 840  
(c) Rs. 1,680 (d) Rs. 3,360

4. If one root of a equation is  $2 + \sqrt{5}$ , then the quadratic equation is:

- (a)  $x^2 + 4x - 1 = 0$  (b)  $x^2 - 4x - 1 = 0$   
(c)  $x^2 + 4x + 1 = 0$  (d)  $x^2 - 4x + 1 = 0$

5. A man starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was Rs. 1,500 after 4 years of service and Rs. 1,800 after 10 years of service, what was his starting salary and what is the annual increment in rupees?

- (a) Rs. 1,300, Rs. 50 (b) Rs. 1,100, Rs. 50  
(c) Rs. 1,500, Rs. 30 (d) None.

6. The sides of an equilateral triangle are shortened by 12 units, 13 units and 14 units respectively and a right angled triangle is formed. The side of the equilateral triangle is :

- (a) 17 units (b) 16 units  
(c) 15 units (d) 18 units.

7. The value of  $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \dots \dots \infty}}}$  is :

- (a) -3 (b) 2  
(c) 3 (d) 4

8. Area of a rectangular garden is 8000 square metres. Ratio in length and breadth is 5:4. A path of uniform width, runs all round the inside of the garden. If the path occupies  $3200 \text{ m}^2$ , what is its width?

- (a) 12m (b) 6m  
(c) 10m (d) 4m.

9. A man went to the Reserve Bank of India with Rs. 1,000. He asked the cashier to give him Rs. 5 and Rs. 10 notes only in return. The man got 175 notes in all. Find how many notes of Rs. 5 and Rs. 10 did he receive?

- (a) (25, 150) (b) (40, 110)  
(c) (150,25) (d) None.

10. A man rowing at the rate of 5 km in an hour in still water takes thrice as much time in going 40 km up the river as in going 40 km down. Find the rate at which the river flows :

- (a) 9 km/hr (b) 2.5 km/hr  
(c) 12 km/hr (d) None.

11. The value of

$$2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \dots}}}}$$
 is :

- (a)  $1 \pm \sqrt{2}$  (b)  $2 \pm \sqrt{5}$  .  
(c)  $2 \pm \sqrt{3}$  (d) None.

12. If  $x^3 - 6x^2 + 11x - 6 = 0$  then find the value of  $(3x - 4)$ .

- (a) (1,2,3) (b) (-1,2,5)  
(c) (-1,3, 5) (d) (2, 3, 5)

13. If  $(2 + \sqrt{3})$  is a root of a quadratic equation  $x^2 + px + q = 0$  then find the value of p and q.

- (a) (4,-1) (b) (4,1)  
(c) (-4,1) (d) (2,3)

14. If area and perimeter of a rectangle is  $6000 \text{ cm}^2$  and 340 cm respectively, then the length of rectangle is :

- (a) 140 (b) 120  
(c) 170 (d) 200

15. A straight line passes through the point (3, 2). Find the equation of the straight line.

- (a)  $x + y = 1$  (b)  $x + y = 3$   
(c)  $x + y = 5$  (d)  $x + y = 2$

16. One root of the equation:

$$x^2 - 2(5+m)x + 3(7+m) = 0$$
 is reciprocal of the other.

Find the value of M.

- (a) -7 (b) 7  
(c) 1/7 (d) - 1/7

17. A straight line of  $x = 15$  is :

- (a) Parallel to Y axis (b) Parallel to X axis  
(c) A diagonal line. (d) Passes through origin.

18. If the length of a rectangle is 5 cm more than the breadth and if the perimeter of the rectangle is 40 cm, then the length & breadth of the rectangle will be :

- (a) 7.5 cm, 2.5 cm (b) 10 cm, 5 cm  
(c) 12.5 cm, 7.5 cm (d) 15.5 cm, 10.5 cm.

19. Roots of the equation  $3x^2 - 14x + k = 0$  will be reciprocal of each other if:

- (a)  $k = -3$  (b)  $k = 0$   
(c)  $k = 3$  (d)  $k = 14$ .

20. Positive value of 'k' for which the roots of equation  $12x^2 + kx + 5 = 0$  are in ratio 3:2, is:

- (a) 5/12 (b) 12/5  
(c)  $\frac{3\sqrt{10}}{2}$  (d)  $5\sqrt{10}$

21. If one root of the equation  $x^2 - 3x + k = 0$  is 2, then value of k will be:  
(a) -10 (b) 0  
(c) 2 (d) 10
22. If the ratio of  $(5x - 3y)$  and  $(5y - 3x)$  is 3:4, then the value of  $x : y$  is :  
(a) 27:29 (b) 29 :27  
(c) 3 : 4 (d) 4:3
23. If roots of equation  $x^2 + x + r = 0$  are ' $\alpha$ ' and ' $\beta$ ' and  $\alpha^3 + \beta^3 = -6$ . Find the value ' $r$ ' ?  
(a)  $\frac{-5}{3}$  (b)  $\frac{7}{3}$   
(c)  $\frac{-4}{3}$  (d) 1
24. If one root of the Equation  $px^2 + qx + r = 0$  is r then other root of the Equation will be:  
(a)  $1/q$  (b)  $1/r$   
(c)  $1/p$  (d)  $\frac{1}{p+q}$
25. If the ratio of the roots of the Equation  $4x^2 - 6x + p = 0$  is 1:2 then the value of p is:  
(a) 1 (b) 2  
(c) -2 (d) -1
26. If arithmetic mean between roots of a quadratic equation is 8 and the geometric mean between them is 5, the equation is \_\_\_\_\_.  
(a)  $x^2 - 16x - 25 = 0$  (b)  $x^2 - 16x + 25 = 0$   
(c)  $x^2 - 16x + 5 = 0$  (d) None of these.
27. The minimum value of the function  $x^2 - 6x + 10$  is \_\_\_\_\_.  
(a) 1 (b) 2  
(c) 3 (d) 10
28. If one of the roots of the equation  $x^2 + px + a$  is  $\sqrt{3} + 2$ , then the value of ' $p$ ' and ' $a$ ' is:  
(a) -4, -1 (b) 4, -1  
(c) -4, 1 (d) 4, 1
29. The quadratic equation  $x^2 - 2kx + 16 = 0$  will have equal roots when the value of ' $k$ ' is \_\_\_\_\_.  
(a)  $\pm 1$  (b)  $\pm 2$   
(c)  $\pm 3$  (d)  $\pm 4$
30. If  $\alpha$  and  $\beta$  are the roots of the equation  $x^2 + 7x + 12 = 0$ , then the equation whose roots  $(\alpha + \beta)^2$  and  $(\alpha - \beta)^2$  will be:  
(a)  $x^2 - 14x + 49 = 0$  (b)  $x^2 - 24x + 144 = 0$   
(c)  $x^2 - 50x + 49 = 0$  (d)  $x^2 - 19x + 144 = 0$

**ANSWER KEY****TEST –CHAPTER-2 EQUATIONS**

1. A	2. B	3. D	4. B	5. A	6. A	7. C	8. C	9. C	10. B
11. A	12. B	13. C	14. B	15. C	16. A	17. A	18. C	19. C	20. D
21. C	22. A	23. C	24. B	25. B	26. B	27. A	28. C	29. D	30. C