CHAPTER-21

FRAMINNG ALGEBRAIC EXPRESSIONS.

QUESTION BANK

MCQ

1. 5 more than twice a number x is written as
(a) 5 + x + 2
(b) 2x + 5
(c) 2x − 5
(d) 5x + 2

2. The quotient of x by 2 is added to 5 is written as
(a) x/2 + 5
(b) 2/x+5
(c) (x+2)/ 5
(d) x/ (2+5)

3. The quotient of x by 3 is multiplied by y is written as
(a) x/3y
(b) 3x/y
(c) 3y/x
(d) xy/3

4. 9 taken away from the sum of x and y is
(a) x + y − 9
(b) 9 − (x+y)
(c) x+y/ 9
(d) 9/ x+y

5. The quotient of x by y added to the product of x and y is written as
(a) x/y + xy
(b) y/x + xy
(c) xy+x/ y
(d) xy+y/ x

6. $a^2b^3 \times 2ab^2$ is equal to
(a) $2a^3b^4$
(b) $2a^3b^5$
(c) $2ab$
(d) a^3b^5

7. $4a^2b^3 \times 3ab^2 \times 5a^3b$ is equal to
(a) $60a^3b^5$
(b) $60a^6b^5$
(c) $60a^6b^6$
(d) a^6b^6

8. If $2x^2y$ and $3xy^2$ denote the length and breadth of a rectangle, then its area is
(a) $6xy$
(b) $6x^2y^2$
(c) $6x^3y^3$
(d) x^3y^3

9. In a room there are x^2 rows of chairs and each two contains $2x^2$ chairs. The total number of chairs in the room is
(a) $2x^3$
(b) $2x^4$
(c) x^4
(d) $x^4/2$

10. $a^3 \times 2a^2b \times 3ab^5$ is equal to
(a) a^6b^6
(b) $23a^6b^6$
(c) $6a^6b^6$
(d) None of these.

AVERAGE LEVEL

1. Write in the form of an algebraic expression:

(i) Perimeter (P) of a rectangle is two times the sum of its length (l) and its breadth (b).

(ii) Perimeter (P) of a square is four times its side.

(iii) Area of a square is square of its side.

(iv) Surface area of a cube is six times the square of its edge.

2. Express each of the following as an algebraic expression:

(i) The sum of x and y minus m.

(ii) The product of x and y divided by m.

(iii) The subtraction of 5m from 3n and then adding 9p to it.

(iv) The product of 12, x, y and z minus the product of 5, m and n.

(v) Sum of p and 2r – s minus sum of a and 3n + 4x.

3. Construct a formula for the following:

Total wages (Rs W) of a man whose basic wage is (Rs B) for t hours week plus (Rs R) per hour, if he works a total of T hours.

4. If x = 4, evaluate:

(i) $3x + 8$

(ii) $x^2 – 2x$

(iii) $x^2 / 2$

5. If m = 6, evaluate:

(i) $5m – 6$

(ii) $2m^2 + 3m$

(iii) $(2m)^2$

6. If x = 4, evaluate:

(i) $12x + 7$

(ii) $5x^2 + 4x$

(iii) $x^2 / 8$

7. If m = 2, evaluate:

(i) $16m – 7$

(ii) $15m^2 – 10m$

(iii) $1 / 4 \times m^3$

8. If x = 10, evaluate:

(i) $100x + 225$

(ii) $6x^2 – 25x$

(iii) $1 / 50 \times x^3$

9. If a = – 10, evaluate:

(i) 5a

(ii) a^2

(iii) a^3

10. If x = – 6, evaluate:

(i) 11x

(ii) $4x^2$

(iii) $2x^3$

11. If m = – 7, evaluate:

(i) 12m

(ii) $2m^2$

(iii) $2m^3$

MODERATE LEVEL

12. Find the average (A) of four quantities p, q, r and s. If A = 6, p = 3, q = 5 and r = 7; find the value of s.

13. If a = 5 and b = 6, evaluate:

(i) 3ab

(ii) $6a^2b$

(iii) $2b^2$

14. If x = 8 and y = 2, evaluate:

(i) 9xy

(ii) $5x^2y$

(iii) $(4y)^2$

15. If x = 5 and y = 4, evaluate:

(i) 8xy

(ii) $3x^2y$

(iii) $3y^2$

16. If y = 5 and z = 2, evaluate:

(i) 100yz

(ii) $9y^2z$

(iii) $5y^2$

(iv) $(5z)^3$

17. If x = 2 and y = 10, evaluate:

(i) 30xy

(ii) $50xy^2$

(iii) $(10x)^2$

(iv) $5y^2$

18. If m = 3 and n = 7, evaluate:

(i) 12mn

(ii) $5mn^2$

(iii) $(10m)^2$

(iv) $4n^2$

19. If a = – 10, evaluate:

(i) 3a – 2

(ii) $a^2 + 8a$

(iii) $1 / 5 \times a^2$

20. If x = – 6, evaluate:

(i) 4x – 9

(ii) $3x^2 + 8x$

(iii) $x^2 / 2$

22. If p = -10, evaluate :
(i) 6p + 50 (ii) $3p^2 – 20p$

23. If y = -8, evaluate :
(i) 6y + 53 (ii) $y^2 + 12y$

24.If x = 2 and y = -4, evaluate :
(i) 11xy (ii) $5x^2y$
(iii) $(5y)^2$ (iv) $8x^2$

25.If m = 9 and n = -2, evaluate
(i) 4mn (ii) $2m^2n$ (iii) $(2n)^3$

26. If m = -8 and n = -2, evaluate
(i) 12mn (ii) $3m^2n$ (iii) $(4n)^2$

27 .If x = -5 and y = -8, evaluate :
(i) 4xy (ii) $2xy^2$ (iii) $4x^2$ (iv) $3y^2$

28.Find T, if T = 2a – b, a = 7 and b = 3.

29. From the formula $B = 2a^2 – b^2$, calculate the value of B when a = 3 and b = -1.

HIGHER LEVEL

30. The wages ₹ W of a man earning ₹ x per hour for t hours are given by the formula W = xt. Find his wages for working 40 hours at a rate of ₹ 39.45 per hour.

31. The temperature in Fahrenheit scale is represented by F and the temperature in Celsius scale is represented by C. If F = 9/5 x C + 32, find F when C = 40.

32. The number of bacteria in a culture is x now. It becomes square of itself after one week. What will be its number after two weeks?

33. The area of a rectangle is given by the product of its length and breadth. The length of a rectangle is two-third of its breadth. Find its area if its breadth is x cm.

34. If there are x rows of chairs and each row contains x^2 chairs. Determine the total number of chairs.

35. Think of a number. Multiply by 5. Add 6 to the result. Subtract y from this result. What is the result?

36. The number of rooms on the ground floor of a building is 12 less than the twice of the number of rooms on first floor. If the first floor has x rooms, how many rooms does the ground floor has?

37. Binny spend Rs a daily and saves Rs b per week. What is her income for two weeks?

38. Rahul scores 80 marks in English and x marks in Hindi. What is his total score in the two subjects?

39. Rohit covers x centimetres in one step. How much distance does he cover in y steps?

40. One apple weighs 75 grams and one orange weighs 40 grams. Determine the weight of x apples and y oranges.

41. One pencil costs Rs 2 and one fountain pen costs Rs 15. What is the cost of x pencils and y fountain pens?

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