ALLEN

Algebra

Time – 1 hour   **Maximum Marks - 20**

Important Instructions

- This test contains 20 questions.
- Each question has FOUR options (1), (2), (3) and (4). ONLY ONE of these four options are correct.
- For each question, marks will be awarded in one of the following categories.
  Full Marks: +1   : If only correct answer is given.
  Zero Marks: 0   : If no answer is given.
  Negative Marks   : There is no negative marking.

1. Cost of 1 pen is ₹ y, then cost of 10 pens is

(1) ₹ 10y   (2) ₹ 10 + y   (3) ₹ 10 – y   (4) ₹ 10 ÷ y

2. A girl runs x metre in 10 minutes. How many metres does she run in 1 hour?

(1) (6 + x) metre   (2) 6x metre   (3) 60x metre   (4) (x – 6) metres

3. 3 added to the sum of x and y is written as

(1) 3 × (x + y)   (2) 3 – (x + y)   (3) 3 + (x + y)   (4) None

4. The coefficient of x in 4 – 3x is

(1) 4   (2) 1   (3) 3   (4) –3

5. The operation not involved in forming the expression $\left(7n - \dfrac{7}{n} \right)$ is

(1) addition   (2) subtraction   (3) multiplication   (4) division

6. Which expression is not equal to 18?

(1) 2t, t = 9   (2) t – 5, t = 23   (3) 3t + 3, t = 5   (4) 9t ÷ 3, t = 5

7. Which verbal expression does not represent a – 8?

(1) 8 less than a   (2) a decreased by 8

(3) Take away 8 from a   (4) a subtracted from 8

8. If we divide the sum of three numbers a, b and c by 8. We can represent this statement algebraically as

(1) $\dfrac{a+b+c}{8}$ (2) (a + b + c) × 8 = 4

(3) $\dfrac{a+b+c}{8} = 4$ (4) $\dfrac{a+b+c}{8} = 8$

9. The next number of the pattern 4, 9, 19, 39, _____ is

(1) 80   (2) 79   (3) 78   (4) None of these

10. Which of the following is an algebraic expression?

(1) 5 × 8 ÷ 4 – 6 　　(2) 7 × x – 3 + 5 　　(3) 15 ÷ 5 × 4 – 3 　　(4) $\dfrac{16}{5}$ – 2 × 6 ÷ 3

11. 7 times a number decreased by the sum of 1 and 5 equals 22. What is the number?

(1) 38 　　　　　(2) 22 　　　　　(3) 7 　　　　　(4) 4

12. I think of a number and on adding 13 to it, I get 27. The equation for this is

(1) x – 27 = 13 　　(2) x – 13 = 27 　　(3) x + 27 = 13 　　(4) x + 13 = 27

13. Which of the following are like terms?

–8x, 11y, 8z, –7z, 3z

(1) –8x, 8z 　　　(2) 8z, –7z, 3z 　　(3) 11y, 3z 　　　(4) None of these

14. The coefficient of y^2 in $-3xy^2z$ is

(1) –3 　　　　　(2) –3x 　　　　　(3) –3xz 　　　　　(4) –3xyz

15. Which of the following is a binomial?

(1) p + q 　　　　(2) 2p + 3p 　　　(3) –p – q + r 　　(4) 2q – 2q

16. Number of match sticks required to make a pattern of L is _____.

(1) 2 　　　　　(2) 3 　　　　　(3) 4 　　　　　(4) 5

(Direction Questions Q.17 – Q.20)

	Column-I		Column-II
(A)	Solve: x + 15 = 40	(p)	x = 35
(B)	Solve: x – 21 = 14	(q)	x = 6
(C)	Solve: 3x = 18	(r)	x = 80
(D)	x/4 = 20	(s)	x = 25

17. Option A matches with

(1) p 　　　　　(2) q 　　　　　(3) r 　　　　　(4) s

18. Option B matches with

(1) p 　　　　　(2) q 　　　　　(3) r 　　　　　(4) s

19. Option C matches with

(1) p 　　　　　(2) q 　　　　　(3) r 　　　　　(4) s

20. Option D matches with

(1) p 　　　　　(2) q 　　　　　(3) r 　　　　　(4) s

TEST SOLUTIONS

Answer Key

Question	1	2	3	4	5	6	7	8	9	10
Answer	**1**	**2**	**3**	**4**	**1**	**4**	**4**	**1**	**2**	**2**
Question	11	12	13	14	15	16	17	18	19	20
Answer	**4**	**4**	**2**	**3**	**1**	**1**	**4**	**1**	**2**	**3**

1. **Option (1)**

   Cost of 10 pens = 10 × ₹ y

   = ₹ 10 y

2. **Option (2)**

   1 hour = 60 minutes

   Distance run in 10 minutes = x metre

   Distance run in 60 minutes = 6 × x metre

   = 6x metres

3. **Option (3)**

   3 + (x + y)

4. **Option (4)**

   The coefficient of x in 4 – 3x is –3.

5. **Option (1)**

   Addition is not involved in forming the expression $\left(7n - \dfrac{7}{n}\right)$.

6. **Option (4)**

   (1) 2t = 2(9) =18

   (2) t – 5 = 23 – 5= 18

   (3) 3t + 3 = 3(5) + 3 =18

   (4) 9t ÷ 3 = $\dfrac{9 \times 5}{3}$ = 15 (not equal to 18)

7. **Option (4)**

   'a' subtracted from 8 is 8 – a, which is different from the given statement.

8. **Option (1)**

   $\dfrac{a + b + c}{8}$

9. **Option (2)**

9 – 4 = 5

19 – 9 = 10

39 – 19 = 20

x – 39 = 40

∴ x = 79

10. **Option (2)**

7 × x – 3 + 5

Expression which is a combination of variables and constants are algebraic expressions.

11. **Option (4)**

According to question

Let the number be x

7x – (1 + 5) = 22

7x – 6 = 22

7x = 28

x = 4

12. **Option (4)**

Let the number be x

x + 13 = 27

13. **Option (2)**

8z, –7z, 3z are like terms.

14. **Option (3)**

The coefficient of y^2 in $-3xy^2z$ is $-3xz$.

15. **Option (1)**

p + q is a binomial.

16. **Option (1)**

Number of match sticks required to make a pattern of L is 2.

17. **Option (4)**

x + 15 = 40

x = 40 – 15

x = 25

18. **Option (1)**

x – 21 = 14

x = 21 + 14

x = 35

19. **Option (2)**

3x = 18

$x = \dfrac{18}{3} = 6$

x = 6

20. **Option (3)**

$\dfrac{x}{4} = 20$

x = 20 × 4

x = 80