

# Algebra (Introduction)

## MCQ Test, Set 01

Time: 30 minutes

Maximum marks: 25

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

- There are 25 questions. Each has exactly one correct answer: choose A, B, C or D.
- Each correct answer carries 1 mark. There is no negative marking.
- The key sheet and worked solutions are at the end of this test.

1. Which of  $r$ ,  $p$ ,  $-3$  and  $t$  is a constant?

- A.**  $r$                       **B.**  $p$                       **C.**  $-3$                       **D.**  $t$

2. Which of  $a$ ,  $3$ ,  $28$  and  $4$  is a variable?

- A.**  $a$                       **B.**  $3$                       **C.**  $28$                       **D.**  $4$

3. The sum of  $p$  and  $c$  is

- A.**  $p - c$                       **B.**  $p + c$                       **C.**  $pc$                       **D.**  $c - p$

4. The subtraction of  $c$  from  $a$  is

- A.**  $c - a$                       **B.**  $a + c$                       **C.**  $a - c$                       **D.**  $-ac$

5. The symbolic form of 'divide  $p$  by 4' is

- A.**  $\frac{p}{4}$                       **B.**  $p - 4$                       **C.**  $\frac{4}{p}$                       **D.**  $4p$

6. The symbolic form of '59 more than  $c$ ' is

- A.**  $c - 59$                       **B.**  $59c$                       **C.**  $59 - c$                       **D.**  $c + 59$

7. The symbolic form of 'half of  $r$ ' is

- A.**  $\frac{r}{2}$                       **B.**  $r - 2$                       **C.**  $\frac{2}{r}$                       **D.**  $2r$

8. The symbolic form of 'one third of  $m$ ' is

- A.**  $m - 3$                       **B.**  $\frac{m}{3}$                       **C.**  $\frac{3}{m}$                       **D.**  $3m$

9.  $1 \times q =$ 

- A.**  $0$                       **B.**  $-q$                       **C.**  $q$                       **D.**  $1$

10.  $-1 \times r =$ 

- A.**  $-1$                       **B.**  $-r$                       **C.**  $0$                       **D.**  $r$

11. Which of  $5$ ,  $8 - n$ ,  $6ab$  and  $\frac{3r}{z}$  is not a term?

- A.**  $5$                       **B.**  $8 - n$                       **C.**  $6ab$                       **D.**  $\frac{3r}{z}$

12. Which of the following is not a factor of  $15xy$ ?
- A.  $x$                       B.  $y$                       C.  $b$                       D. 15
- 
13. The factors of  $-6qr$  are
- A.  $-6$  only                      B.  $6, q, r$                       C.  $q, r$  only                      D.  $-6, q, r$
- 
14. The coefficient of  $m$  in  $-7mn$  is
- A.  $n$                       B.  $-7$                       C.  $-7m$                       D.  $-7n$
- 
15. The coefficient of  $mpq$  in  $5mpq$  is
- A.  $mpq$                       B. 5                      C.  $5mpq$                       D.  $-5$
- 
16. The coefficient of  $ac$  in  $\frac{ac}{5}$  is
- A. 0                      B.  $\frac{1}{5}$                       C. 5                      D. 1
- 
17. The coefficient of  $n$  in  $-\frac{n}{12}$  is
- A.  $-\frac{1}{12}$                       B.  $\frac{1}{12}$                       C. 12                      D.  $-12$
- 
18. Which of the following is a like term of  $-4mn$ ?
- A.  $-4$                       B.  $-4m$                       C.  $-4am$                       D.  $-8nm$
- 
19. Which of the following is not a like term of  $-6xyz$ ?
- A.  $11xyz$                       B.  $-6$                       C.  $-10xyz$                       D.  $-14xyz$
- 
20.  $12np + 25np =$
- A.  $300np$                       B.  $13np$                       C.  $37np$                       D. 37
- 
21.  $2mp + 16mp + 15mp =$
- A.  $33mp$                       B.  $31mp$                       C. 33                      D.  $18mp$
- 
22.  $11y + 12c + 2y + 16c =$
- A.  $23y + 18c$                       B.  $28y + 13c$                       C.  $41cy$                       D.  $13y + 28c$
- 
23.  $-29ac + 19ac =$
- A.  $10ac$                       B.  $-48ac$                       C.  $-10ac$                       D.  $48ac$
- 
24.  $-20np - 8np =$
- A.  $-28np$                       B.  $-12np$                       C.  $12np$                       D.  $28np$
- 
25.  $7bc - 13c - 18c - 9bc =$
- A.  $2bc - 31c$                       B.  $-2bc + 31c$                       C.  $-33bcc$                       D.  $-2bc - 31c$
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## Key sheet

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|              |              |              |              |              |
|--------------|--------------|--------------|--------------|--------------|
| <b>1. C</b>  | <b>2. A</b>  | <b>3. B</b>  | <b>4. C</b>  | <b>5. A</b>  |
| <b>6. D</b>  | <b>7. A</b>  | <b>8. B</b>  | <b>9. C</b>  | <b>10. B</b> |
| <b>11. B</b> | <b>12. C</b> | <b>13. D</b> | <b>14. D</b> | <b>15. B</b> |
| <b>16. B</b> | <b>17. A</b> | <b>18. D</b> | <b>19. B</b> | <b>20. C</b> |
| <b>21. A</b> | <b>22. D</b> | <b>23. C</b> | <b>24. A</b> | <b>25. D</b> |

## Solutions

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1. Which of  $r$ ,  $p$ ,  $-3$  and  $t$  is a constant?

$-3$  has a fixed value, so it is a constant.

$r$ ,  $p$  and  $t$  can take various values: they are variables.

**Ans: (C)  $-3$**

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2. Which of  $a$ ,  $3$ ,  $28$  and  $4$  is a variable?

$a$  can take various numerical values, so it is a variable.

$3$ ,  $28$  and  $4$  have fixed values: they are constants.

**Ans: (A)  $a$**

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3. The sum of  $p$  and  $c$  is

Sum means add.

$$p + c$$

**Ans: (B)  $p + c$**

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4. The subtraction of  $c$  from  $a$  is

Take  $c$  away from  $a$ .

$$a - c$$

**Ans: (C)  $a - c$**

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5. The symbolic form of 'divide  $p$  by  $4$ ' is

$p$  divided by  $4$  is  $\frac{p}{4}$

**Ans: (A)  $\frac{p}{4}$**

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6. The symbolic form of '59 more than  $c$ ' is

59 more than  $c$ : add 59 to  $c$ .

$$c + 59$$

**Ans: (D)  $c + 59$**

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7. The symbolic form of 'half of  $r$ ' is

Half of  $r$  is  $\frac{r}{2}$

**Ans: (A)  $\frac{r}{2}$**

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8. The symbolic form of 'one third of  $m$ ' is

One third of  $m$  is  $\frac{m}{3}$

**Ans: (B)  $\frac{m}{3}$**

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9.  $1 \times q =$

Rule:  $1 \times a = a$

$$1 \times q = q$$

**Ans: (C)  $q$**

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10.  $-1 \times r =$

Rule:  $-1 \times a = -a$

$-1 \times r = -r$

Ans: (B)  $-r$

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11. Which of 5,  $8 - n$ ,  $6ab$  and  $\frac{3r}{z}$  is not a term?

A term is made by multiplication (or) division only.

$8 - n$  joins two terms with a  $-$  sign, so it is not a term.

Ans: (B)  $8 - n$

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12. Which of the following is not a factor of  $15xy$ ?

$15xy = 15 \times x \times y$

$b$  is not in this product, so it is not a factor.

Ans: (C)  $b$

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13. The factors of  $-6qr$  are

$-6qr = -6 \times q \times r$

So the factors are  $-6, q, r$  (the sign stays with the number).

Ans: (D)  $-6, q, r$

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14. The coefficient of  $m$  in  $-7mn$  is

$-7mn = -7n \times m$

So the coefficient of  $m$  is  $-7n$ .

Ans: (D)  $-7n$

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15. The coefficient of  $mpq$  in  $5mpq$  is

$5mpq = 5 \times mpq$

So the coefficient of  $mpq$  is 5.

Ans: (B) 5

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16. The coefficient of  $ac$  in  $\frac{ac}{5}$  is

$\frac{ac}{5} = \frac{1}{5} \times ac$

So the coefficient of  $ac$  is  $\frac{1}{5}$ .

Ans: (B)  $\frac{1}{5}$

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17. The coefficient of  $n$  in  $-\frac{n}{12}$  is

$-\frac{n}{12} = -\frac{1}{12} \times n$

So the coefficient of  $n$  is  $-\frac{1}{12}$ .

Ans: (A)  $-\frac{1}{12}$

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**18.** Which of the following is a like term of  $-4mn$ ?

Like terms have the same literal factors  $mn$ .

$-4mn$ ,  $-8nm$ : the same literal factors  $mn$  ( $nm = mn$ ), so like terms.

**Ans: (D)**  $-8nm$

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**19.** Which of the following is not a like term of  $-6xyz$ ?

Like terms have the same literal factors  $xyz$ .

$-6xyz$  has literal factors  $xyz$ ,  $-6$  has no literal factor: different, so unlike terms.

**Ans: (B)**  $-6$

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**20.**  $12np + 25np =$

$$12np + 25np = (12 + 25)np$$

$$= 37np$$

**Ans: (C)**  $37np$

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**21.**  $2mp + 16mp + 15mp =$

$$2mp + 16mp + 15mp = (2 + 16 + 15)mp$$

$$= 33mp$$

**Ans: (A)**  $33mp$

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**22.**  $11y + 12c + 2y + 16c =$

$$11y + 12c + 2y + 16c = (11y + 2y) + (12c + 16c)$$

$$= (11 + 2)y + (12 + 16)c$$

$$= 13y + 28c$$

**Ans: (D)**  $13y + 28c$

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**23.**  $-29ac + 19ac =$

$$-29ac + 19ac = (-29 + 19)ac = -10ac$$

Signs different: subtract and keep the sign of the bigger:  $-29 + 19 = -10$

**Ans: (C)**  $-10ac$

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**24.**  $-20np - 8np =$

$$-20np - 8np = (-20 - 8)np = -28np$$

Signs same: add and keep the sign:  $-20 - 8 = -28$

**Ans: (A)**  $-28np$

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**25.**  $7bc - 13c - 18c - 9bc =$

$$7bc - 13c - 18c - 9bc = (7bc - 9bc) + (-13c - 18c)$$

$$= (7 - 9)bc + (-13 - 18)c$$

$$= -2bc - 31c$$

**Ans: (D)**  $-2bc - 31c$

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