SIMPLIFICATION

INTRODUCTION

1. **'BODMAS' Rule:**

This rule depicts the correct sequence in which the operations are to be executed, so as to find out the value of given expression.

Here B - Bracket,
O - of,
D - Division,
M - Multiplication,
A - Addition and
S - Subtraction

Thus, in simplifying an expression, first of all the brackets must be removed, strictly in the order (), {} and ||.

After removing the brackets, we must use the following operations strictly in the order:

(i) of (ii) Division (iii) Multiplication (iv) Addition (v) Subtraction.

2. **Modulus of a Real Number:**

Modulus of a real number a is defined as

$$|a| = \begin{cases} a, \text{ if } a > 0 \\ -a, \text{ if } a < 0 \end{cases}$$

Thus, |5| = 5 and |-5| = -(-5) = 5.

3. **Virnaculum (or Bar):**

When an expression contains Virnaculum, before applying the 'BODMAS' rule, we simplify the expression under the Virnaculum.

SIMPLIFICATION

EXERCISE

1. $(16)^{0.16} \times (16)^{0.04} \times (2)^{0.2}$ is equal to -
   (a) 4 **(b)** 2 **(c)** 3 **(d)** 6 **(e)** None
2. $\sqrt{5} \times 5^3 \div 5^{3/2} = 5^{a+2}$ Value of *a* will be -
   (a) 2 **(b)** 1 **(c)** 8 **(d)** 4 **(e)** None
3. Which one is greatest number - $3\sqrt{2}$, $\sqrt{3}$, $3\sqrt{5}$ and 1.5
   (a) $3\sqrt{5}$ **(b)** $\sqrt{3}$ **(c)** $3\sqrt{2}$ **(d)** 1.5 **(e)** None
4. If x = 5 and y = 3 then the value of $(x + y)^{x/y}$ will be -
   (a) 36 **(b)** 32 **(c)** 28 **(d)** 8 **(e)** None
5. If $4x = \sqrt{2^{3y}}$, then the value of x/y will be –
   (a) 1/2 **(b)** 2/3 **(c)** 1/6 **(d)** 1/8 **(e)** None
6. $\sqrt{\sqrt{}}$ 0.000064 = ?
   (a) 4 **(b)** 2 **(c)** 3 **(d)** 6 **(e)** None
7. $8^{7.999} \times (64)^{13.012} = (8)^{?}$
   (a) 34.023 **(b)** 34.024 **(c)** 34.025 **(d)** 34.026 **(e)** None
8. Which one is greatest number – $\sqrt{2}$, $3\sqrt{3}$, $4\sqrt{4}$, $6\sqrt{6}$
   (a) $4\sqrt{4}$ **(b)** $3\sqrt{3}$ **(c)** $\sqrt{2}$ **(d)** $6\sqrt{6}$ **(e)** None
9. $(1/2)^{-1/2}$ is equal to -
   (a) 1.51 **(b)** 1.441 **(c)** 1.414 **(d)** 11.9 **(e)** None
10. $[(2/5)^6 \div (2/5)^5] \div 2/5$ = ?
    (a) 1 **(b)** 2 **(c)** 3 **(d)** 4 **(e)** None
11. $(22)^{-2}$ is equal to –
    (a) 1/14 **(b)** 1/15 **(c)** 1/16 **(d)** 1/17 **(e)** None
12. $7 \times 7 \times 7 \times 7 \times 7 \times 7 = (?)^2$
    (a) 243 **(b)** 343 **(c)** 443 **(d)** 543 **(e)** None
13. $(10)^{7.5} \times (10)^{4.5} \div (10)^2 = (?)^2$
    (a) 20 **(b)** 30 **(c)** 40 **(d)** 10 **(e)** None
14. $(366)^3 = 366 \times ?$
    (a) 133965 **(b)** 133945 **(c)** 133935 **(d)** 133956 **(e)** None
15. $(10)^{-3}$ = ?
    (a) 0-001 **(b)** 0-002 **(c)** 0-003 **(d)** 0-004 **(e)** None
16. $[(512)^{3/4}]^{4/27}$ will be –
    (a) 1 **(b)** 2 **(c)** 3 **(d)** 4 **(e)** None
17. Value of $(16)^{0.36} \times (256)^{0.07}$ will be –
    (a) 2 **(b)** 4 **(c)** 6 **(d)** 8 **(e)** None
18. $\frac{(21)^2 \times (72)^2 + (?)^2}{(189)^2} = (17)^2$
    (a) 11 **(b)** 12 **(c)** 13 **(d)** 14 **(e)** None
19. $(999)^1 \times (900)^0 \times (0)^0 = ?$
    (a) 999 **(b)** 1 **(c)** 0 **(d)** 999 × 900 **(e)** None

ANSWER SHEET

SIMPLIFICATION EXERCISE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
B	B	A	B	D	A	A	B	C	A	C	B	D	D	A	B	B	E	E