MATHEMATICAL OPERATIONS

Self – Evaluation Test

1. If $\times$ stand for addition, $\div$ stands for subtraction, $+$ stands for multiplication and $-$ stands for division, then $(20 \times 6 \div 6 \times 4)$ is equal to:

(a) 5 (b) 24

(c) 25 (d) 80

(e) None of these

2. If $\times$ stands for add, y stands for subtract, z stands for divide and p stands for multiply, then what is the value of $(7 \text{ p } 3) \text{ y } 6 \times 5$?

(a) 5 (b) 10

(c) 15 (d) 20

(e) None of these

3. If $\div$ means $+$, $-$ means $\div$, $\times$ means $-$ and $+$ means $\times$, then $\dfrac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1} = ?$

(a) 0 (b) 8

(c) 12 (d) 16

(e) None of these

4. If '+' means 'divided by', '–' means 'add', '×' means 'minus and '÷' means 'multiplied by', what will be the value of the following expression

$[\{(17 \times 12) - (4 / 2)\} + (23 - 6)] \div 0$

(a) infinite (b) 0

(c) 118 (d) 219

(e) None of these

5. If $\times$ stands for $-$, $\div$ stands for $+$, $+$ stands for $\div$ and $-$ stands for $\times$, which one of the following equations is correct?

(a) $15 - 5 \div 5 \times 20 + 10 = 6$

(b) $8 \div 10 - 3 + 5 \times 6 = 8$

(c) $6 \times 2 + 3 \div 12 - 3 = 15$

(d) $3 \div 7 - 5 \times 10 + 3 = 10$

(e) None of these

6. If the given signs - and x, and numbers 3 and 6 are interchanged, which one of the following equations would be correct?

(a) $4 \times 3 - 6 = 19$

(b) $6 \times 1 - 3 = 12$

(c) $3 - 6 \times 8 = 10$

(d) $3 \times 6 - 18 = 24$

(e) None of these

Direction: (Questions 7-8): In each of the following questions, some symbols are represented by letters as shown below:

+	−	×	÷	=	>	<
B	**G**	**E**	**C**	**D**	**A**	**F**

7. Now, identify the correct expression in each case.

(a) 18 C 3 D 6 B 8 C 4 G 12

(b) 18 A 3 E 6 B 8 G 4 B 12

(c) 18 C 3 G 6 B 8 B 4 D 12

(d) 18 F 3 B 6 E 8 G 4 E 12

(e) None of these

8. Now, identify the correct expression in each

(a) 15 B 5 G 8 B 4 G 6 F 3

(b) 15 C 15 B 8 F 4 B 6 C 3

(c) 15 A 5 E 8 C 4 B 6 E 3

(d) 15 C 5 F 8 C 4 B 6 C 3

(e) None of these

9. If $20 - 10$ means 200, $8 \div 4$ means 12, 6×2 means 4, then

$100 - 10 \times 1000 \div 1000 + 100 \times 10 = ?$

(a) 0 (b) 20

(c) 1090 (d) 1900

(e) None of these

10. If "x" stands for "+"; "y" stands for "−"; "z" stands for "÷" and "w" stands for "×", then

10w 2x 5y 5 = ?

(a) 15 (b) 12

(c) 20 (d) 10

(e) None of these

11. If $\div$ means $\times$, $\times$ means $+$, $+$ means $-$ and $-$ means $\div$, find the value of

$16 \times 3 + 5 - 2 \div 4.$

(a) 9 (b) 10

(c) 19 (d) All of these

(e) None of these

12. If $\div$ implies $=$, $\times$ implies $<$, $+$ implies $>$, $-$ implies $\times$, $>$ implies $\div$, $<$ implies $+$, $=$ implies $-$, identify the correct expression.

(a) $1 - 3 > 2 + 1 - 5 = 3 - 1 < 2$

(b) $1 - 3 > 2 + 1 \times 5 = 3 \times 1 > 2$

(c) $1 \times 3 > 2 + 1 \times 5 \times 3 - 1 > 2$

(d) $1 - 3 > 2 + 1 \times 5 + 3 - 1 > 2$

(e) None of these

13. What will be the correct mathematical signs that can be inserted in the following equations?

$25 - 5 - 8 - 60 = 100$

(a) $- \times +$ (b) $\div - +$

(c) $\div + -$ (d) $\div \times +$

(e) None of these

14. If A + D > C + E, C + D = 2B and B + E > C + D, it necessarily follows that

(a) A+D>B+E (b) A+D>B+C

(c) A+B>2D (d) B+D>C+E

(e) None of these

15. If '●' means '×', '■' means '+', '▲' means '÷' '>' means '=', '<' means '≠' ✳ means '>' and ♦ means '<' then which one of the following equations is correct ?

(a) 30 '▲' 10 '●' 6 ♦ 8 '■' 7

(b) 5 ✳ 2 '■' 9 '▲' 3

(c) 9 '■' 25 '▲' 5 > 13

(d) 11 '●' 5 ♦ 6 '●' 3 '▲' 9 '■' 40

(e) None of these

16. If the + and × signs of the following equations are interchanged, what will be the correct equation?

(a) $7 \times 5 + 3 = 20$ (b) $4 + 9 \times 1 = 42$

(c) $6 \times 5 + 8 = 46$ (d) $2 + 11 \times 4 = 28$

(e) None of these

17. If 'A' means '÷' 'B' means '+', 'C' means '×' and 'D' means '–', then

12 C 4 A 24 D 10 B 1 =?

(a) $11\frac{1}{2}$ (b) 23

(c) –7 (d) $16\frac{4}{5}$

(e) None of these

18. If '+' stands for '×'; '×' stands for '÷';'÷' stands for '–' and '–' stands for '+' then

$2-8\times2+6\div7=?$

(a) 32 (b) 19

(c) 23 (d) 9

(e) None of these

19. Which one of the following signs, if changed, will make the equation correct?

$25\div5+17\times2-6=10$

(a) ÷and– (b) +and–

(c) ×and– (d) ÷and–

(e) None of these

20. If 'a' stands for '÷', 'b' stands for '×', 'c' stands for '+' and 'd' stands for'–' then

5 c 20 a 4 b 2 d 10 =?

(a) 5 (b) 10

(c) 15 (d) 20

(e) None of these

Answer – Key

1. B	**2.** D	**3.** A	**4.** B	**5.** B
6. C	**7.** C	**8.** D	**9.** A	**10.** C
11. A	**12.** D	**13.** D	**14.** B	**15.** E
16. C	**17.** C	**18.** B	**19.** C	**20.** A

Explanation

1. **Explanation**

Option (B) is correct.

$20+6-6+4=24$

2. **Explanation**

Option (D) is correct.

$(7\times3)-6+5$

$21-6+5=20$

3. **Explanation**

Option (A) is correct. Using the correct symbols, we have:

Given expression $\frac{(36-4)\div8-4}{4\times8-2\times16+1}=\frac{32\div8-4}{32-32+1}=\frac{4-4}{0+1}=0$

4. **Explanation**

Option (B) is correct. Using the correct symbols, we have:

Given expression $=[\{(17-12)+(4\times2)\}\div(23+6)]\times0=0$

5. **Explanation**

Option (B) is correct. Using the proper signs, we get:

Expression in (A) $= 15 \times 5 + 5 - 20 \div 10 = 15 \times 5 + 5 - 2 = 75 + 5 - 2 = 78$.

Expression in (B) $= 8 + 10 \times 3 \div 5 - \frac{3}{5} - 6 = 8 + 6 - 6 = 8$.

Expression in (C) $= 6 - 2 \div 3 + 12 \times 3 = 6 - \frac{2}{3} + 36 = 42 - \frac{2}{3} = \frac{124}{3}$

Expression in (*D*) $= 3 + 7 \times 5 - 10 \div 3 = 3 + 7 \times 5 - \frac{10}{3} = 3 + 35 - \frac{10}{3} = \frac{104}{3}$.

6. Explanation

Option (C) is correct because. After Interchanging the signs and number the equations will be

(a) $4 - 6 \times 3 = 14$ which is wrong

(b) $3 - 1 \times 6 = 3$ whichiswrong

(c) $6 \times 3 - 8 = 10$ which is correct

(d) $6 - 3 \times 18 = 48$ which is wrong

(*e*) $3 - 5 \times 6 = 27$ which is wrong

7. Explanation

Option (C) is correct,

Using the proper notations in (C), we get the statement as:

$18 \div 3 - 6 + 8 + 4 = 12$ or $6 - 6 + 8 + 4 = 12$ or 122, which is true.

8. Explanation

Option (D) is correct.

Using the proper notations in (D), we get the statement as:

$15 \div 5 < 8 \div 4 + 6 \div 3$ *or* $3 < 2 + 2$ *or* $3 < 4$ which is true.

9. Explanation

Option (A) is correct.

Given that: $20 - 10 = 200$. But, actually $20 \times 10 = 200$. So, $-$ means $\times$

Given that: $8 - 4 = 12$, But, actually $8 + 4 = 12$ So, $\div$ means $+$

Given that: $6 \times 2 = 4$. But, actually $6 - 2 = 4$. So, $\times$ means $-$

Thus, in the given mathematical language, $-$ means $\times$, $\div$ means $+$ and $\div$ means $+$ So $+$ means $\div$. Putting the correct signs, we have:

Given expression $= 100 \times 10 - 1000 + 1000 - 100 - 10$

$= 1000 - 1000 + 10 - 10 = 0.$

10. Explanation

Option (C) is correct.

10 x 2+5-5

20+5-5=20

11. Explanation

Option (A) is correct. Using the correct symbols, we have:

Given expression $= 16 + 3 - 5 \div 2 \times 4 = 16 + 3 - \frac{5}{2} \times 4 = 19 - 10 = 9$.

12. Explanation

Option (D) is correct. Using the proper notations in (D), we get the statement as

$1 \times 3 \div 2 > 1 < 5 > 3 \times 1 \div 2 or \frac{3}{2} > 1 < 5 > \frac{3}{5}$, which is true.

13. Explanation

Option (D) is correct. The new equations according to the 4 options will be

(a) $25 - 5 \times 8 + 60 = 45$

(b) $25 \div 5 - 8 + 60 = 57$

(c) $25 \div 5 + 8 - 60 = -47$

(d) $25 \div 5 \times 8 + 60 = 100$

14. Explanation

Option (B) is correct.

A+D>C+E

B+E>C+D or 2B

Since, the relation between 1 and 2 is not clear it is however certain that A + D > B + C (combination with C is < A + D).

15. Explanation

Option (E) is correct. The new equations will be:

(a) $30 \div 10 \times 6 < 8 + 7$ which is wrong

$18 < 15$

(b) $5 > 2 + 9 \div 3$

$5 > 5$ which is wrong

(c) $9 + 25 \div 5 = 13$

$14 = 13$ which is wrong

(d) $11 \times 5 < 6 \times 3 \div 9 + 40$

$55 < 42$ which is wrong

16. Explanation

Option (C) is correct. After interchanging the signs the equations are:

(a) $7+5\times3=22$ which is wrong

(b) $4\times9+1=37$ which is wrong

(c) $6+5\times8=46$ which is correct

(d) $2\times11+4=26$ which is wrong

17. Explanation

Option (C) is correct.

$12\times4\div24-10+1$

$2-10+1=-7$

18. Explanation

Option (B) is correct. After substituting the symbols in the given expression the new expression will be:

$2+8\div2\times6-7$

The solving steps will be:

$2+4\times6-7$

$2+24-7$

$26-7=19$

19. Explanation

Option (C) is correct. After changing the signs the equations will be:

(a) $25-5+17\times2\div6$

$25-5+\frac{17}{3}$ (the answer will be in fractions whereas 10 is a whole number, so no further calculation)

(b) $25\div5-17\times2+6$

$5-34+6=-23$ which is wrong

(c) $25\div5+17-2\times6$

$5+17-12=10$ which is correct

(d) $25+5\div17\times2-6$ ($5\div17$ gives the answer as in (A)).

20. Explanation

Option (A) is correct.

$5+20\div4\times2-10$

$5+10-10=5$