NUMBER SYSTEM - B

1. $3\sqrt{6} + 4\sqrt{6}$ is equal to:

a) $6\sqrt{6}$ b) $7\sqrt{6}$ c) $4\sqrt{12}$ d) $7\sqrt{12}$

2. $\sqrt{6} \times \sqrt{27}$ is equal to:

a) $9\sqrt{2}$ b) $3\sqrt{3}$ c) $2\sqrt{2}$ d) $9\sqrt{3}$

3. The irrational number between 2 and 2.5 is

a) $\sqrt{11}$ b) $\sqrt{5}$ c) $\sqrt{22.5}$ d) $\sqrt{12.5}$

4. The value of $\sqrt{10}$ times $\sqrt{15}$ is equal to

a) $5\sqrt{6}$ b) $\sqrt{25}$ c) $10\sqrt{5}$ d) $\sqrt{5}$

5. The decimal representation of the rational number is

a) Always terminating   b) Either terminating or repeating

c) Either terminating or non-repeating   d) Neither terminating nor repeating

6. $2\sqrt{3} + \sqrt{3} =$

a) 6   b) $2\sqrt{6}$ c) $3\sqrt{3}$ d) $4\sqrt{6}$

7. Which of the following is rational?

a) 4/0   b) 0/4   c) $\sqrt{3}$ d) π

8. Write three rational numbers between 4 and 5?

a) 12 / 6, 13 / 6, 14 / 6   b) 12 / 7, 13 / 7, 14 / 7

c) 17 / 4, 18 / 4, 19 / 4   d) 17 / 2, 18 / 13, 19 / 23

9. Which of the following is equal to x^3?

a) $X^6 - x^3$ b) $X^6 . x^3$ c) X^6 / x^3 d) $(x^6)^3$

10. Which of the following is an irrational number?

a) $\sqrt{23}$ b) $\sqrt{225}$ c) 0.3796   d) 7.478478

ANSWER KEY

1. B

$3\sqrt{6} + 4\sqrt{6} = (3 + 4)\sqrt{6} = 7\sqrt{6}$

2. A

$\sqrt{6*27} = \sqrt{2*3*3*3}$

$= (3 \times 3)\sqrt{2}$

$= 9\sqrt{2}$

3. B

The irrational number between 2 and 2.5 is $\sqrt{5}$ because the approximate value of $\sqrt{5}$ is 2. 23606…

4. A

$\sqrt{10} \times \sqrt{15} = (\sqrt{2}.\sqrt{5}) \times (\sqrt{3}.\sqrt{5})$

$= (\sqrt{5} \times \sqrt{5})(\sqrt{2} \times \sqrt{3}) = 5\sqrt{6}$.

5. B

As per the definition of rational number, its decimal representation is either terminating or repeating.

6. C

$2\sqrt{3} + \sqrt{3} = (2+1)\sqrt{3} = 3\sqrt{3}$.

7. B

0/4 is a rational number that is equal to 0. Whereas π and $\sqrt{3}$ are irrational numbers and 4/0 is undefined.

8. C

There are several rational numbers between 4 and 5.The numbers are between 16/4 and 20/4.Therefore, the answer is C, that is, 17 / 4, 18 / 4, 19 / 4.

9. C

$X^6/x^3 = x^{6-3} = x^3$

10. A

$\sqrt{23} = 4.79583152331…$

Since the decimal expansion of the number is non-terminating non-recurring. Hence, it is an irrational number.

But, $\sqrt{225} = 15$, 0.3796 and 7.478478 are terminating.