

**Answer The Following**

1) Simplify  $\sqrt{12+6\sqrt{3}} + \sqrt{12-6\sqrt{3}}$

2)  $(2 \times 10^{-15}) \times (2 \times 10^{-15}) = 7$

3) Simplify  $\sqrt{\frac{3^{26}+3^{28}}{9^5+3^7 \times 243}}$

4) Simplify following and write answer in exponential form

A)  $\frac{5^5 \times 5^2}{5^{-7}} \times 5^2 \times 5^{-4}$

B)  $\frac{11^5 \times 11^8}{11^{-7}} \times 11^{-9}$

5) Simplify  $16^{204}$ .

Choose correct answer(s) from given choice

6) What is the unit's digit in  $(234)^{1002} + (234)^{1003}$ ?

- a. 1
- b. 0
- c. 7
- d. 6

7) Which is smaller among  $2^{10}$ ,  $3^{10}$ ,  $4^{10}$  and  $5^{10}$ .

- a.  $2^{10}$
- b.  $5^{10}$
- c.  $3^{10}$
- d.  $4^{10}$

8) If  $a^x = \sqrt[3]{5}$ ,  $b^y = \sqrt[3]{2}$  and  $c^z = \sqrt[3]{10}$ , find the value of xyz.

- a. 27
- b.  $\frac{1}{27}$
- c.  $\frac{1}{9}$
- d. 9

9) How many prime factors exist for the following expression

$(6)^7 \times (7)^5 \times (5)^3$

- a. 24
- b. 19
- c. 22
- d. 20

10) Evaluate  $2017^{2017} \times 2017$