Number System-03- Unit Digit

1. Find the unit digit in each of the following cases:

   i. 423^{423} ii. 413^{7758} iii. $53^{58} \times 33^{88}$

Directions for questions 2 to 10: Choose the correct answer option for each of the following question. In questions where the variable n is used, it refers to a natural number.

2. Find the unit's digit of $222^{333} + 333^{222}$.

   1. 1 2. 3 3. 5 4. 7 5. 9

3. Find the unit's digit of $19^{19^{19^{19^{\cdots}}}}$

   1. 1 2. 3 3. 5 4. 7 5. 9

4. What is the unit's digit of $17^{18^{19^{20^{\cdots}}}}$

   1. 1 2. 3 3. 5 4. 7 5. 9

5. Find the digit in the ten's position of 5×2^{40}

   1. 0 2. 2 3. 4 4. 6 5. 8

6. For how many two digit values of n would 17^n end with 3?

   1. 25 2. 24 3. 23 4. 22 5. 21

7. What is the largest two digit value than n can take such that 88^n and 22^n have the same unit's digit?

   1. 99 2. 98 3. 97 4. 96 5. 95

8. If the unit's digit of 37^n is 3, what is the unit's digit of 73^n?

   1. 1 2. 3 3. 7 4. 9 5. 3 or 7

9. Find the unit's digit of $8^n + 2^n$ if the unit digit of 4^n is not 6.

   1. 0 2. 2 3. 4 4. 6 5. 8

10. How many distinct values can the unit digit of $1^n + 2^n + 3^n + \ldots + 8^n + 9^n$ assume?

    1. 1 2. 2 3. 3 4. 4 5. 5