KIET Group of Institutions

Humanities & Social Sciences

Aptitude-Sheet-02(Number System:-Unit Digit & Remainders)

Unit Digit:-

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

   i. 423^{423} ii. 413^{7753} iii. $53^{53} \times 33^{33}$

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 $19^{19^{19^{19^{\cdot^{\cdot^{\cdot}}}}}}$

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

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

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

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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

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Remainders:-

Find the remainder in case of each of the following division

1) $80^{81} \div 9$

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

2) $81^{81} \div 13$

1. 1 2. 2 3. 3 4. 11 5. 12

3) $60^{60} \div 11$

1. 1 2. 3 3. 5 4. 9 5. 10

4) $4^{33} \div 27$

1. 1 2. 4 3. 13 4. 19 5. 26

5) $83^{1002} \div 39$

1. 1 2. 5 3. 8 4. 25 5. 38

6) $9103^{220} \div 91$

1. 1 2. 3 3. 9 4. 27 5. 81

7) $60^{60} \div 17$

1. 1 2. 9 3. 13 4. 15 5. 16

8) $103^{101} \div 19$

1. 1 2. 7 3. 8 4. 12 5. 18

9) $3^{52} \div 244$

1. 3 2. 9 3. 27 4. 81 5. 243

10) $1000^{1000} \div 77$

1. 1 2. 2 3. 33 4. 44 5. 76

11) $110^{220} \div 21$

1. 1 2. 4 3. 5 4. 16 5. 20

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12) $2^{99} \div 25$

1. 1 2. 12 3. 13 4. 15 5. 24

13) $7^{109} \div 17$

1. 16 2. 15 3. 11 4. 6 5. None of these

14) $(222^{333} + 333^{222}) \div 11$

1. 0 2. 1 3. 6 4. 7 5. 10

15) $(37^{64} - 27^{64}) \div 64$

1. 0 2. 1 3. 16 4. 32 5. 63