NUMBER SYSTEMS

- KOUSTAV

CONCEPT – REMAINDERS

1. On dividing a number by 5, we get 3 as remainder. What will be the remainder when the square of this number is divided by 5?

A. 0 B. 1 C. 2 D. 4

2. On dividing a number by 774, we get 35 as remainder. What will be the remainder when the same number is divided by 18?

A. 14 B. 17 C. 18 D. 19

3. What is the remainder when 2^{25} is divided by 3?

A. 2 B. 1 C. 0 D. 3

4. What is the remainder when ($1^1 + 2^2 + 3^3 + \ldots + 100^{100}$) is divided by 4?

A. 3 B. 1 C. 2 D. 0

5. Find the remainder when 53^{12} is divided by 17.

A. 8 B. 0 C. 1 D. 16

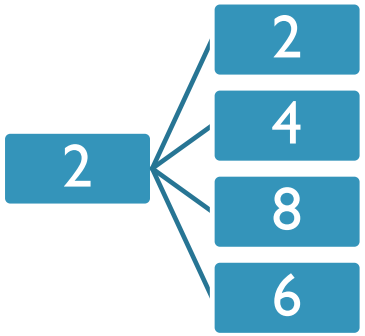
6. The remainder when ($7^{21}+7^{22}+7^{23}+7^{24}$) is divided by 25:

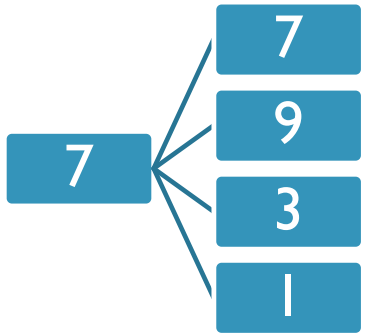
A. 1 B. 24 C. 0 D. 12

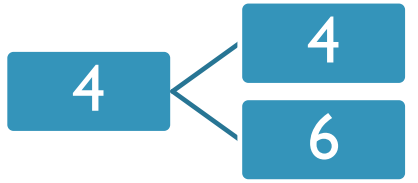
7. $P = (1!)^2 + (2!)^2 + (3!)^2 + \ldots + (100!)^2$.
The remainder when 5^{2P} is divided by 13 is:

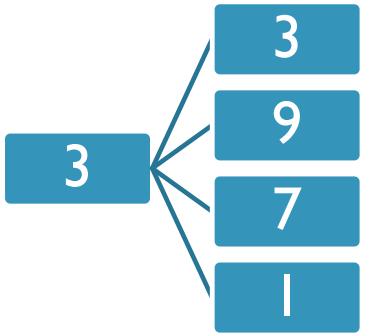
A. 1 B. 12 C. 0 D. 2

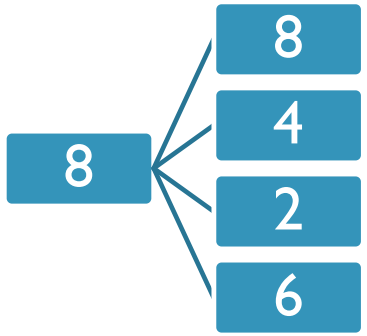
CONCEPT – CYCLICITY (UNIT'S PLACE)

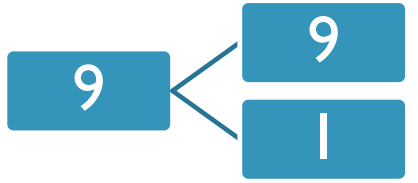


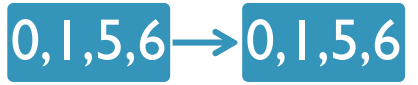












1. What is the last digit of the following expressions:

1.a) 2^5

1.b) 2^{25}

1.c) 2^{125}

1.d) 432^{1234}

2. What is the last digit of the expression 777^{777}?

A. 3 B. 1 C. 7 D. 9

3. The unit's digit of the product $3^{1001} \times 7^{22002} \times 13^{333003}$ is:

A. 3 B. 1 C. 5 D. 9

4. The unit's digit of the sum $22^{222} + 33^{333} + 44^{444}$ is:

A. 3 B. 1 C. 5 D. 9

5. N = 1! + 2! + 3! +……+ 2010!. What is the digit in the unit's place of N?

A. 3 B. 2 C. 1 D. 0

6. The unit's place of the product $34^{123!} \times 3456^{123456!}$ is:

A. 4 B. 8 C. 1 D. 6

7. $1234567890^{1234567890}$

ANSWER KEY – NUMBER SYSTEMS

REMAINDERS		CYCLICITY	
QUESTION	ANSWER	QUESTION	ANSWER
1	D	1	2, 2, 2, 4
2	B	2	C
3	A	3	D
4	D	4	A
5	D	5	A
6	C	6	D
7	B	7	-