Number System Questions and Answers for IBPS Bank Exams

Question: 1

 $397 \times 397 + 104 \times 104 + 2 \times 397 \times 104 = ?$

- (A) 250001
- (B) 251001
- (C) 260101
- (D) 261001

Ans: B

Given expression = $(397)^2 + (104)^2 + 2 \times 397 \times 104$

$$= (397 + 104)^2 = (501)^2 = (500 + 1)^2$$

$$= (500)^2 + 1^2 + 2 \times 500 \times 1 = 250000 + 1 + 1000 = 251001.$$

Question: 2

The numbers 1, 3, 5, 7,, 99 and 128 are multiplied together. The number of zeros at the end of the product must be

- (A) 2
- (B) 5
- (C) 6
- (D) 7

Ans: D

Let $N = (1 \times 3 \times 5 \times 7 \times \times 99) \times 128$.

Clearly, N contains 10 multiplies of 5 (5, 15, 25, 35, 95) and only one multiple of 2 i.e., 128 or 2.

Clearly, highest power of 5 in N is greater than that of 2.

∴ Number of zeros in N = Higher power of 2 in N = 7.

Question: 3

111, 111, 111, 111 is divisible by

- (A) 3 and 37 only
- (B) 3, 11 and 37 only
- (C) 3, 11, 37 and 111 only
- (D) 3, 11, 37, 111 and 1001

Ans: D

Sum of all digits = 12 which is divisible by 3.

So, the given number is divisible by 3.

(Sum of digits at odd places) - (Sum of digits at even places) = 6 - 6 = 0.

So, the given number is divisible by 11.

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So, the given number is divisible by 37.

The given number when divided by 111 gives 1001001001.

Clearly, it is divisible by 111 as well as by 1001.

Hence, the given number is divisible by each one of 3, 11, 37, 111 and 1001.

Question: 4

Which one of the following numbers is divisible by 15?

- (A) 17325
- (B) 23755
- (C) 29515
- (D) 30560

Ans: A

Consider the number 17325.

Its unit digit is 5. So, it is divisible by 5.

Sum of its digits = (5 + 2 + 3 + 7 + 1) = 18, which is divisible by 3.

So, the given number is divisible by 3.

And, since 5 and 3 are co-primes.

So the given number is divisible by (5×3) i.e., 15.

Question: 5

 $(x^n - a^n)$ is divisible by (x - a)

- (A) for all values of n
- (B) only for even values of n
- (C) only for odd values of n
- (D) only for prime values of n

Ans: A

We know that $(x^n - a^n)$ is always divisible by (x - a) for all values of n.

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