Problem set -1

Number System Revision

1. The units digit of the expression 127813\*5533703\*4532828 is
2. What is the maximum power of 24 in 250!
3. Find the maximum value of n such that 157! is perfectly divisible by 10n.
4. A number when successively divided by 3, 4 and 9 leaves respective remainders of 2, 3 and 7. What will be the remainders if the original number is divided successively by 3, 5 and 7?
5. Find the total number of divisors of 10!
6. Find the sum of even factors of 3600
7. Find the Product of factors of 48
8. A hundred- and twenty-digit number is formed by writing the first x natural numbers in front of each other as 12345678910111213.... Find the remainder when this number is divided by 8.
9. When the number 12345678910111213………….40 is divided by 9 what will be the remainder?
10. The seven-digit number 27A46B5 is divisible by 99. What can be the possible value of A&B
11. Let b be a positive integer and a = b2 - b. If b ≥ 4 then a2 - 2a is divisible by:

a. 15 b. 20 c. 24 d. all of these

1. The digits of a three-digit number A are written in the reverse order to form another three-digit number B. If B > A and B-A is perfectly divisible by 7, then which of the following is necessarily true?

A. 100 < A < 299 B. 106 < A < 305 C. 112 < A < 311 D. 118 < A < 317

1. What is the least number which when divided by 5, 6, 7 and 8 leaves a remainder 3, but when divided by 9 leaves no remainder?

A. 1108 B. 1683 C. 2007 D. 3363

1. The least number which should be added to 28523 so that the sum is exactly divisible by 3, 5, 7 and 8 is:

A. 41 B. 42 C. 32 D. 37

1. Find the length of the plank which can be used to measure exactly the lengths 4 m 50 cm, 9 m 90 cm and 16 m 20 cm in the least time.
2. Find the remainder when 11705 is divided by 17.
3. What is the remainder when the sum

(1!)^1 + (2!)^2 + (3!)^3+..………………..+(1152!)^1152 is divided by 1152?

1. What is the remainder when 2(8!)-21(6!) divides 14(7!) +14(13!)?
2. Find the last two digits of 87^474.
3. Find the last two digits of 78379.