



Multiple choice questions

- Euclid's division lemma states that for positive integers a and b , there exist unique integers q and r such that $a = bq + r$, where r must satisfy.
 (1) $1 < r < b$ (2) $0 < r < b$ (3) $0 \leq r < b$ (4) $0 < r \leq b$
- Using Euclid's division lemma, if the cube of any positive integer is divided by 9 then the possible remainders are
 (1) 0, 1, 8 (2) 1, 4, 8 (3) 0, 1, 3 (4) 1, 3, 5
- If the HCF of 65 and 117 is expressible in the form of $65m - 117$, then the value of m is
 (1) 4 (2) 2 (3) 1 (4) 3
- The sum of the exponents of the prime factors in the prime factorization of 1729 is
 (1) 1 (2) 2 (3) 3 (4) 4
- The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is
 (1) 2025 (2) 5220 (3) 5025 (4) 2520
- $7^{4k} \equiv \underline{\hspace{1cm}} \pmod{100}$
 (1) 1 (2) 2 (3) 3 (4) 4
- Given $F_1 = 1$, $F_2 = 3$ and $F_n = F_{n-1} + F_{n-2}$ then F_5 is
 (1) 3 (2) 5 (3) 8 (4) 11
- The first term of an arithmetic progression is unity and the common difference is 4. Which of the following will be a term of this A.P.
 (1) 4551 (2) 10091 (3) 7881 (4) 13531
- If 6 times of 6th term of an A.P. is equal to 7 times the 7th term, then the 13th term of the A.P. is
 (1) 0 (2) 6 (3) 7 (4) 13
- An A.P. consists of 31 terms. If its 16th term is m , then the sum of all the terms of this A.P. is
 (1) 16 m (2) 62 m (3) 31 m (4) $\frac{31}{2} m$
- In an A.P., the first term is 1 and the common difference is 4. How many terms of the A.P. must be taken for their sum to be equal to 120?
 (1) 6 (2) 7 (3) 8 (4) 9
- If $A = 2^{65}$ and $B = 2^{64} + 2^{63} + 2^{62} + \dots + 2^0$ which of the following is true?
 (1) B is 2^{64} more than A (2) A and B are equal
 (3) B is larger than A by 1 (4) A is larger than B by 1