5B

ee24btech11055 - Sai Akhila Reddy Turpu

1. The coefficients of x^p and x^q in the expansion of $(1+x)^{p+q}$ are: (2002)

(a) equal
(b) equal with opposite signs
(c) reciprocals of each other
(d) none of these

2. If the sum of coefficients in the expansion of $(a+b)^n$ is 4096, then the greatest coefficient in the expansion is: (2002)

(a) 1594
(b) 792
(c) 924
(d) 2924

3. The positive integer just greater than $(1+0.0001)^{10000}$ is: (2002)

(a) 4
(b) 5
(c) 2
(d) 3

4. r and n are positive integers, $r > 1, n > 2$ and coefficient of $(r+2)^{th}$ term and $(3r)^{th}$ term in the expansion of $(1+x)^{2n}$ are equal, then n equals: (2002)

(a) $3r$
(b) $3r+1$
(c) $2r$
(d) $2r+1$

5. If $a_n = \sqrt{7+\sqrt{7+\sqrt{7+...}}}$ having n radical signs, then by methods of mathematical induction, which is true? (2002)

(a) $a_n > 7 \ \forall \ n \geq 1$
(b) $a_n < 7 \ \forall \ n \geq 1$
(c) $a_n < 4 \ \forall \ n \geq 1$
(d) $a_n < 3 \ \forall \ n \geq 1$

6. If x is positive, the first negative term in the expansion of $(1+x)^{27/5}$ is: (2003)

(a) 6th term
(b) 7th term
(c) 5th term
(d) 8th term

7. The number of integral terms in the expansion of $(\sqrt{3}+\sqrt[8]{5})^{256}$ is: (2003)

(a) 35
(b) 32
(c) 33
(d) 34