5B(1-7)

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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) $a_n > 7 \ \forall \ n \geq 1$ (c) $a_n < 4 \ \forall \ n \geq 1$
   (b) $a_n < 7 \ \forall \ n \geq 1$ (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 $\left(\sqrt{3}+\sqrt[8]{5}\right)^{256}$ is: (2003)

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