Republic of the Philippines
Department of Education
National Capital Region
SCHOOLS DIVISION OFFICE
Quezon City, Metro Manila

Questions for Grade 10 Quiz Bee Oral Competition

Easy Round

1. Evaluate: $0!(1! + 2! + 3!)$. (Answer: 9)
2. What is the number of permutation of zero objects selected from a set of 5 objects? (Answer: 1)
3. What do we call an arc with a measure equal to one-half the circumference of a circle? (Answer: Semicircle)
4. What is the next term in the Fibonacci sequence 1, 1, 2, 3, 5, 8, ...? (Answer: 13)
5. What are the zeros of the polynomial function $h(x) = (x - 2)(x + 1)(x - 3)$? (Answer: 2, -1, 3)
6. Which theorem states that "If the polynomial $P(x)$ is divided by $(x - c)$, then the remainder is $P(c)$"? (Answer: Remainder Theorem)
7. What is the leading coefficient of the polynomial function $f(x) = 3 - 2x^2 + 4x^4 + 5x^6$. (Answer: 5)
8. What is the next term in the geometric sequence 3, 9, 27, ...? (Answer: 81)
9. How many possible rational zeros does the following polynomial function have: $P(x) = 5x^4 - 7x^2 + 3$? (Answer: 4)
10. What is the leading term of the polynomial function $P(x) = 11x^2 - 3x^7 + 2x^8 - 3$? (Answer: $2x^8$)

Average Round

1. How many 4-digit numbers can be formed from the digits 0, 1, 2, 3, 4, and 5, if repetition of digits is not allowed? (Answer: 300)
2. How many ways can Cinderella arrange the seven dwarfs in a round table? (Answer: 720)
3. In the canteen, a meal order consists of appetizer, a dish and a dessert. There are 3 appetizers, 5 dishes, and 2 desserts. Find the number of ways a customer can have an order.(Answer: 30)
4. How many ways can 6 keys be arranged in a key ring? (Answer: 60)
5. What is the measure of an inscribed angle that intercepts a semicircle? (Answer: 90°)

Difficult Round

1. Given six non-collinear, coplanar points, how many triangles can be formed using these points? (Answer: 20)
2. In how many ways can 5 persons be seated around a circular table if two of them insist on sitting beside each other? (Answer: 12)
3. What are the x-intercepts of the function $f(x) = x^2(x + 3)(x - 2)$? (Answer: 0, -3 and 2)
4. According to Descartes' rule of signs, how many positive zeros does the polynomial function $f(x) = 4x^5 - 6x^3 + 2x^2 - 6x - 9$ have? (Answer: 3 or 1)
5. What is the remainder of $3x^{100} - 4$ divided by $(x + 1)$? (Answer: -1)