NMTC Stage 1 detailed analysis by Resonance Experts

NMTC 2019: The National Mathematics Talent Contests (NMTC) is a national level examination cum Cash Awards for the top 3 winners in each level. The Cash Awards program is conducted by AMTI (Association of Mathematics Teachers of India) and students studying in class V to XII are eligible to appear for the **NMTC 2019**. NMTC was conducted on 31ST August, 2019 Across the nation.

Eligibility: As per the eligibility criteria of NMTC, students studying in class V to XII are eligible to appear for the **NMTC 2019**. A student from any state of the country can register for this examination and Award scheme. A student can be from a government or a private school.

Stages: NMTC Examination is divided in two stages. 10% students are selected at every center of the examination to appear for second stage. After second stage, National Level merit list is declared.

Pattern/ Syllabus: The syllabus for NMTC examination is pre-degree college mathematics. The areas covered are, mainly

- **Algebra:** Polynomials, Solving equations, inequalities and complex numbers.

- **Geometry:** Geometry of triangles and circles.(Trigonometric methods, vector methods, complex number methods, transformation geometry methods can also be used to solve problems)

- **Number Theory:** Divisibility, Diophantine equations, congruence relations, prime numbers and elementary results on prime numbers.

- **Combinatorics & Graph Theory:** Counting techniques, pigeonhole principle, principle of inclusion and exclusion, basic graph theory.

Question Paper Type and Class wise Marks Distribution

The analysis below is for the three levels of papers:

1) Primary (common paper for class V and VI)

2) Sub-Junior (common paper for class VII and VIII)

3) Junior (common paper for class IX and X)

Primary	Class – V		Class - VI		Total	
Subject	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Mathematics	3	3	22	22	25	25

Sub-Junior	Class – VII		Class - VIII		Class - X		Total	
Subject	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Mathematics	7	7	22	22	1	1	30	30

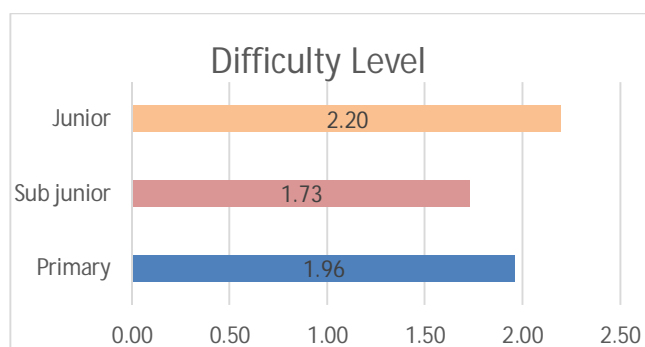| Junior	Class - IX		Class - X		Class - XI		Total	
Subject	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Mathematics	14	14	2	2	14	14	30	30

Overall Difficulty Level Analysis

In this analysis we have rated every question on a scale of 1 to 3. The ratings are done by expert faculty of Resonance. The individual ratings are then averaged to calculate overall difficulty level.

- 1: Easy
- 2: Moderate
- 3: Difficult

Level	Easy Level		Medium Level		Difficult Level		Total	
	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Primary	6	6	14	14	5	5	25	25
Sub-Junior	15	15	8	8	7	7	30	30
Junior	5	5	14	14	11	11	30	30

Level	Difficulty Level
Primary	1.96
Sub junior	1.73
Junior	2.20

Difficulty Level

- Junior: 2.20
- Sub junior: 1.73
- Primary: 1.96

Overall, it was felt that paper of Primary and Junior was tougher from last year while Sub-Junior paper was easier than the last year.

Subject Wise and Topic Wise Analysis

Primary Group (V - VI):

Mathematics			
UNIT & TOPIC NAME	**NO OF QUESTIONS**	**TOTAL MARKS**	**(%) WEIGHTAGE**
Algebra	**2**	**2**	**8.00%**
Age	1	1	4.00%
Word Problem	1	1	4.00%
Measurement	**1**	**1**	**4.00%**
Measurement	1	1	4.00%
Mensuration	**5**	**5**	**20.00%**
Circle	1	1	4.00%
Cuboid	1	1	4.00%
Rectangle	2	2	8.00%
Square	1	1	4.00%
Misc.	**1**	**1**	**4.00%**
Calendar	1	1	4.00%
Number system	**14**	**14**	**56.00%**
Divisibility	1	1	4.00%
Divisor	1	1	4.00%
Fractions	1	1	4.00%
Number Formation	2	2	8.00%
Operation on numbers	2	2	8.00%
Playing with number	4	4	16.00%
Prime number	2	2	8.00%
Remainder	1	1	4.00%
Sequence	**2**	**2**	**8.00%**
Pattern	1	1	4.00%
Series	1	1	4.00%
Grand Total	**25**	**25**	**100.00%**

Sub-Junior Group (VII – VIII):

Mathematics			
UNIT & TOPIC NAME	**NO OF QUESTIONS**	**TOTAL MARKS**	**(%) WEIGHTAGE**
Algebra	**3**	**3**	**10.00%**
Identities	1	1	3.33%
Sequence	2	2	6.67%
Commercial	**2**	**2**	**6.67%**
Percentage	1	1	3.33%
Speed, Distance & Time	1	1	3.33%
Geometry	**3**	**3**	**10.00%**
Polygon	1	1	3.33%
Triangle	2	2	6.67%
Mensuration	**5**	**5**	**16.67%**
Area	1	1	3.33%
Area Of Rectangle & Trapezium	1	1	3.33%
Area Of Square & Triangle	1	1	3.33%
Area Of Triangle	1	1	3.33%
Circle	1	1	3.33%
Number System	**17**	**17**	**56.67%**
Alphanumeric Puzzle	3	3	10.00%
Comparison	1	1	3.33%
Cubes & Cube Roots	2	2	6.67%
Decimal Expansion	1	1	3.33%
L.C.M	1	1	3.33%
Multiples	1	1	3.33%
Number Formation	3	3	10.00%
Numbers	1	1	3.33%
Power & Exponent	1	1	3.33%
Prime Numbers	2	2	6.67%
Simplification	1	1	3.33%
Grand Total	**30**	**30**	**100.00%**

Junior Group (IX – X):

Mathematics			
UNIT & TOPIC NAME	**NO OF QUESTIONS**	**TOTAL MARKS**	**(%) WEIGHTAGE**
Mathematics	**30**	**30**	**100.00%**
Algebra	**11**	**11**	**36.67%**
Algebraic Identities	1	1	3.33%
Inequality	2	2	6.67%
Sequence and series	3	3	10.00%
Simplification	2	2	6.67%
Word problem	3	3	10.00%
Geometry	**4**	**4**	**13.33%**
Angle	1	1	3.33%
Circles	2	2	6.67%
Triangles	1	1	3.33%
Number system	**1**	**1**	**3.33%**
Divisibility	1	1	3.33%
Number System	**7**	**7**	**23.33%**
Digit based	1	1	3.33%
Digital sum	1	1	3.33%
Euler's theorem	1	1	3.33%
Exponent	1	1	3.33%
Integer Type	2	2	6.67%
Mathematical operation	1	1	3.33%
Permutation and combination	**6**	**6**	**20.00%**
Catalan number	1	1	3.33%
Fundamental principle of counting	5	5	16.67%
Polynomial	**1**	**1**	**3.33%**
Division Algorithm	1	1	3.33%
Grand Total	**30**	**30**	**100.00%**