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NMTC Stage I– 2018

A Detailed Analysis by Resonance

NMTC 2018: 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 2018**. NMTC was conducted on 01ST September, 2018 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 2018**. 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	17	17	20	20

Sub-Junior	Class – VII		Class - VIII		Total	
Subject	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Mathematics	11	11	19	19	30	30

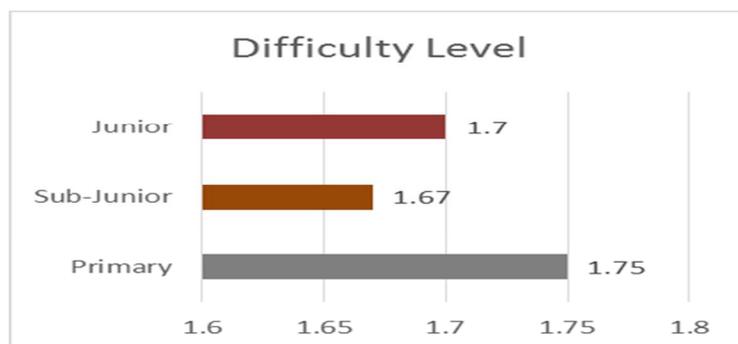| Junior	Class – VIII		Class - IX		Class - X		Class - XI		Total	
Subject	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Mathematics	5	5	14	14	9	9	2	2	30	30

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	
	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Primary	8	8	9	9	3	3
Sub-Junior	15	15	10	10	5	5
Junior	14	14	11	11	5	5

Level	Difficulty Level
Primary	1.75
Sub-Junior	1.67
Junior	1.70

Difficulty Level

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

SUBJECT WISE AND TOPIC WISE ANALYSIS

Primary Group (V - VI):

Mathematics			
UNIT & TOPIC NAME	**NO OF QUESTIONS**	**TOTAL MARKS**	**(%) WEIGHTAGE**
Mathematics	**20**	**20**	**100.00%**
Commercial	**3**	**3**	**15.00%**
Percentage	2	2	10.00%
Profit and Loss	1	1	5.00%
Geometry	**2**	**2**	**10.00%**
Triangles	2	2	10.00%
Mensuration	**3**	**3**	**15.00%**
Area	2	2	10.00%
Area of circle	1	1	5.00%
Misc.	**2**	**2**	**10.00%**
Calendar	1	1	5.00%
Mathematical Operation	1	1	5.00%
Number system	**9**	**9**	**45.00%**
Fractions	5	5	25.00%
Inetgers	1	1	5.00%
Number Formation	2	2	10.00%
Word problem	1	1	5.00%
Sequence	**1**	**1**	**5.00%**
Pattern	1	1	5.00%
Grand Total	**20**	**20**	**100.00%**

Sub-Junior Group (VII – VIII):

Mathematics			
UNIT & TOPIC NAME	**NO OF QUESTIONS**	**TOTAL MARKS**	**(%) WEIGHTAGE**
Mathematics	**30**	**30**	**100.00%**
Algebra	**3**	**3**	**10.00%**
Algebraic Identities	1	1	3.33%
direct and inverse variation	1	1	3.33%
linear equations	1	1	3.33%
Commercial	**3**	**3**	**10.00%**
Percentage	3	3	10.00%
Geometry	**2**	**2**	**6.67%**
line sand angles	1	1	3.33%
lines and angles	1	1	3.33%
Mensuration	**6**	**6**	**20.00%**
area of circle	1	1	3.33%
area of rectangle	1	1	3.33%
area of trapezium	1	1	3.33%
area of triangle	1	1	3.33%
areas and perimeters	2	2	6.67%
Number System	**16**	**16**	**53.33%**
fractions and decimals	1	1	3.33%
Rational Number	3	3	10.00%
cubes and cube roots	1	1	3.33%
playing with numbers	8	8	26.67%
ratio and proportion	1	1	3.33%
rational number	2	2	6.67%
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	**4**	**4**	**13.33%**
Algebraic Indentites	1	1	3.33%
Inequality	2	2	6.67%
Quadratic Equation	1	1	3.33%
Angles	**1**	**1**	**3.33%**
Trignometry	1	1	3.33%
Commercial	**5**	**5**	**16.67%**
Ratio & Proportion	3	3	10.00%
Speed, Distance and Time	1	1	3.33%
Time & Work	1	1	3.33%
Geometry	**2**	**2**	**6.67%**
Polygon	1	1	3.33%
Triangle	1	1	3.33%
Mensuration	**4**	**4**	**13.33%**
Surface Area	1	1	3.33%
Traingle	3	3	10.00%
Number System	**12**	**12**	**40.00%**
Cyclicity	1	1	3.33%
Exponents	1	1	3.33%
Factor	1	1	3.33%
Greatest Exponent	1	1	3.33%
Integer Type	2	2	6.67%
Perfect Square	1	1	3.33%
Rationalization	1	1	3.33%
Square	1	1	3.33%
Word Problem	3	3	10.00%
Polynomial	**2**	**2**	**6.67%**
Division Algorithm	1	1	3.33%
Factorization	1	1	3.33%
Grand Total	**30**	**30**	**100.00%**