ASSAM ACADEMY OF MATHEMATICS

MATHLETICS COMPETITION, 2018

(To be held on 20th May, Sunday, 2018)

APPLICATION FORM

ESTD. 1986, 18 July

Fees : Rs. 100 × 2 = 200 for each Team

Office : Department of Mathematics, G. U., Ghy-14

Corresponding address (*for Mathletics, 2018*)

Dr. Ashish Paul, Dept. of Mathematics, Cotton University, Panbazar, Ghy-1

(*Competitions will be held among 2 member teams*)

Last Date of submission of form : 17th May, 2018

CENTRE : _____

Roll No.

CENTER NO. | TEAM NO.

1. Name of Team mates : 1.
   (In Block letters) 2.
2. Name of the Parents/ 1.
   Guardians (In Block letters) 2.
3. Name of School :
   (In Block letters)

4. Class (Tick mark ✓) : IX / X / School Final Examinee (2018)
5. Address of communication :

(1) *	(2) **
Name : _____	Name : _____
C/o. _____	C/o. _____
Ward No./Road : _____	Ward No./Road : _____
P.O. : _____	P.O. : _____
Pin _____ Phone_____	Pin _____ Phone_____
E-mail : _____	E-mail : _____

6. Centre of choice (Choose one from overleaf) : _____

This is to certify that above information is true to the best of my knowledge.

Signature of the Guardian/Head of Institution	Signature of the Applicatns
1.	1.
2.	2.

ASSAM ACADEMY OF MATHEMATICS

Mathletics Competition, 2018

Visit Web site : www.aamonline.org

Last Date of submission : May 17th, 2018
Date of Examination 20th May, 2018

ADMIT

Name : 1. _____

2. _____

Centre : _____ *** Roll No.**

to Mathletics Competition to be held on 20th May, 2018 from 10 AM to 1 PM.

at (Venue) _____

Roll No. Two digit Centre No. (01-46) | Three digit Team No. (001-999)

Result will be published in website www.aamonline.org

Officer in-charge
Centre :
Date :

CODE	CENTRE	OFFICER-IN-CHARGE
01.	Baihata Chariali	Bipul Sarma, Ramanujan Academy (Mob: 98640-44668)
02.	Barpeta	Brojen Das, Dept. of Mathematics, M.C. College, Barpeta (Mob: 94351-09940)
03.	Biswanath Chariali	Dr.Arun Chaliha, Dept. of Mathematics, Biswanath College (Mob: 94355-06224)
04.	Boko	Dr. Dipankar Sarma, Dept. of Mathematics, J.N.College (Mob: 94353-40747)
05.	Bokakhat	Dr. Surajit Dutta, Dept. of Mathematics, CNB College, Bokakhat (Mob: 94354-36089)
06.	Bongaigaon	Birabrata Das Choudhury, Dept. of Mathematics, Bongaigaon Polytechnic (Mob: 94351-20950)
07.	Chapar	Kiran Ch. Ray, Vill. Bhakatgaon, P. O. Chapar, Dist. Dhubri, Pin-783371 (Mob : 70869-80855)
08.	Dhakuakhana	Tobendra Das, Dept. of Mathematics, Dhakuakhana College (Mob: 94011-68235)
09.	Dhemaji	Abhijit Koch, Dept. of Mathematics, Dhemaji College (Mob: 99546-66609)
10.	Dhubri	T.C. Das, Dept. of Mathematics, B.N.College, Dhubri (Mob: 94353-23958)
11.	Dibrugarh	Priya Dev Goswami, Dept. of Mathematics, DHSK College, Dibrugarh (Mob: 94354-73872)
12.	Digboi	Dr. Jatindra Lahkar, Dept. of Mathematics, Digboi College (Mob: 70020-50062)
13.	Dudhnoi	Dr. Bidyut Kalita, Dept. of Mathematics, Dudhnoi College, (Mob: 94353-13586)
14.	Duliajan	H.K. Borah, Dept. of Mathematics, Delhi Public School (Mob: 94350-68680)
15.	Golaghat	Biman Chandra Goswami, Retd. Principal, Govt Bezbarua H.S.School, (Mob: 94353-54779)
16.	GuwahatiA	Geetanjali Devi,,Axom Jatiya Vidyalaya, Noonmati (Mob: 98647-52844)
17.	Guwahati B	Dr. Debashish Bhattacharjee, Dept. of Mathematics, Gauhati University (Mob: 99548-42691)
18.	Guwahati C	Achyut Sarma, St, Stephen's School, Christan Basti (Mob: 98641-27729)
19.	Guwahati D	Dr. Ashish Paul, Dept. of Mathematics, Cotton University, Guwahati-781 001 (Mob : 98645-24239)
20.	Guwahati E	Bhabesh Mahanta, Brahmaputra Jatiya Vidyalaya, Beltola, Vir Lachit Path (Mob: 94353-0ll88)
21.	Guwahati F	M. Saha, Army Public School, Bashistha, Guwahati (Mob: 94355-53386)
22.	Guwahati G	Dr. Biren Das, Dept. of Mathematics, A. V College, (Mob. 98640-67185
23.	Hajo	Rajiv Das, Dept. of Mathematics, Suren Das College, Hajo (Mob: 98642-01241)
24.	Jagiroad	Ananda Buragohain, Dept. of Mathematics, Jagiroad College, (Mob: 943 53-65225)
25.	Jorhat	Dr. Chandra Chutia, Dept. of Mathematics, JIST, Jorhat (Mob: 99570-32624)
26.	Karimganj	Dr. N. C. Das, Secy, Karimganj Junior College of Science, Karimganj (Mob: 94350-76524)
27.	Kokrajhar	Dr. Sibu Basak, HOD, Dept. of Mathematics, Kokrajhar Govt. College (Mob: 94356-44735)
28.	Lanka	Bidyut Saikia, Parashuram Mazumder Girls' H.E. School, Lanka (Mob: 98644-68857)
29.	Lumding	Shio Kumar Jha, HOD, Dept. of Mathematics, Lumding College, Lumding (Mob: 88769-60608)
30.	Mangaldoi	Prafulla Borah, Dept. of Mathematics, Mangaldoi College, Mangaldoi (Mob: 98596-91450)
31.	Morigaon	Ranjit Kumar Kalita, HOD, Dept. of Mathematics, Morigaon College, (Mob: 94350-64252)
32.	Mirza	Deben Sarma, Dept. of Mathematics, D. K. College, Mirza (Mob: 94351-13832)
33.	Nagaon	Padmeswar Senapati, Dept. of Mathematics, Nowgong College (Mob: 70025-61724)
34.	Nalbari	Dhiren Rajbongshi, Dept. of Mathematics,Nalbari College, Nalbari (Mob: 94353-10075)
35.	Namrup	Aftab Ali, Namrup BVFC H.S.School, Namrup (Mob: 94352-71400)
36.	N. Lakhimpur	Dibyajyoti Gogoi, Dept. of Mathematics, N. Lakhimpur College, (Mob: 98547-61305)
37.	Pathsala	Akash Ali, Bajali Academy of Excellence, Pathsala (Mob: 94012-59447)
38.	Rangia	Dr. Partha P. Mahanta, Teacher Training College, Rangia-5 (Mob: 84038-47463)
39.	Silchar	Debashish Sarma, Dept. of Mathematics, G.C. College, Silchar (Mob: 97065-35995)
40.	Sibsagar	Dr. Rupam Kr. Gogoi, Dept. of Mathematics, Sibsagar College, (Mob: 94350-57213)
41.	Sualkuchi	Tirtha Nath Sarma, Sankardev Sishu Vidya Niketon, P.K. Road, Sualkuchi (Mob : 98642-94177)
42.	Teok	U. Barua, Jyoti vidyapith (Mob: 96783-0l220)
43.	Tezpur	Ram Charan Deka, Dept. of Mathematics, Darrang College, (Mob: 98649-83337)
44.	Tinsukia	Dr. Deepika Bhattacharjee, Dept. of Mathematics, Tinsukia College, Tinsukia (Mob: 99540-42550)

Syllabus : Trigonometry, Algebra, Number theory, Geometry, Inequality, Elementry Combinatorics.

Sample Question Paper : Mathletics, 2017 (For class IX / X)

1. Prove that the sum of the cubes of the legs of a right angled triangle is less than the cube of the hypotenuse.
2. Find the integral solutions of the following equation. $2x^2y^2 + y^2 - 6x^2 - 12 = 0$
3. Solve the following inequation. $\left|x-1-x^2\right| \le \left|x^2-3x+4\right|$
4. In a triangle ABC, A is reflected at B to A′, B is reflected at C to B′ and C is reflected at A to C′. Find $\left|A'B'C'\right|$ in terms of $\left|ABC\right|$ where $\left|A'B'C'\right|$ and $\left|ABC\right|$ respectively denote the areas of the triangles A′B′C′ and ABC.
5. The polynomial $ax^4+bx^3+cx^2+dx+e$ with integer coefficients is divisible by 7 for every integer x, show that $7\,|\,a, 7\,|\,b, 7\,|\,c, 7\,|\,d$ and $7\,|\,e$
6. Show that the sum of squares of five successive positive integers is not a square.
7. Do there exist positive integers x, y such that x+y, 2x+y and, x+2y are all perfect squares? Justify.
8. If $a_i \in \{-1,1\}, i=1,2,3,....,n$ and $a_1a_2+a_2a_3+a_3a_4+.....+a_na_1=0$ then show that $4\,|\,n$.
9. Let n be a positive integer which is not divisible by 2 or 5. Prove that there is a multiple of n consisting entirely of 1's
10. Find all pairs (x,y) of non negative integers such that x^2+3y and y^2+3x are simultaneously perfect squares.
11. Let a, b, c be the sides of a triangle. Then prove that $ab+bc+ca \le a^2+b^2+c^2 \le 2(bc+ca+ab)$.
12. Construct a triangle, given one side as a, median m of the other side, and radius R of a circumscribed circle.
13. Two boys with one bicycle between them set out from A in the direction of B, one by bicycle and the other on foot. At a certain distance from A, the one riding the bicycle left it by the road and continued towards B on foot. The one who had started out on foot reached the bicycle and rode the rest of the distance. Both reach B at the same time. On the return trip from B to A, they did as before, but this time the cyclist rode one kilometre more than the first time and so his comrade arrived in A 21 minutes after he did. Find the rate of each of the boys on foot if they both did 20km/hour cycling and on foot, the first took 3 minutes less to cover each kilometre than the second.