	June exam **5th year** **School year 2020/2021**
scuola per l'europa di Parma	

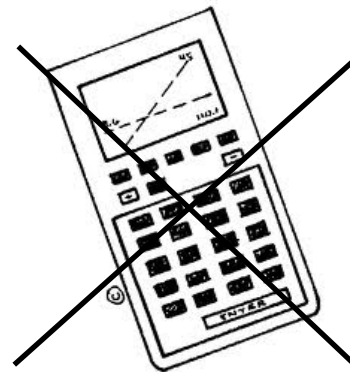**DATA:** 15th June, from 11h35 to 12h20

DURATION OF EXAMINATION:
¾ hour (45 minutes)

AUTHORISED MATERIAL:
Examination without technological tool
Pencil and ruler

SPECIFIC INSTRUCTIONS:

- Use a different page for each question.
- Answers must be supported by explanations.
- They must show the reasoning behind the results or solutions provided.
- If graphs are used to find a solution, they must be sketched as part of the answer.
- Unless indicated otherwise, full marks will not be awarded if a correct answer is not accompanied by supporting evidence or explanations of how the results or the solutions have been achieved.
- When the answer provided is not the correct one, still some marks can be awarded if it is shown that an appropriate method and/or a correct approach has been used.
- Some of the questions can be answered only with the help of the calculator. The wording of these questions makes this clear. All other questions can be solved with or without the use of a calculator.

Teacher: Nicoletta Anzoino

Number of candidates: 9

EXAM 2020-2021 : MATHEMATICS 4 PERIODS

PART A		
A1 PROBABILITY	**Pag. 1/1**	**Marks**
1) A single fair die is rolled. Let A be the event "number 2" and B the event "even number". Determine if A and B are independent? Justify you answer.		**2 marks**

2) A candy is randomly selected from a paper box with 6 hard candies and 12 soft candies.
 	
If "H" is the event of getting a hard candy and "S" is the event of getting a soft candy, determine the following probabilities:
 	
  I.   P(H)
  II.   P(S)
 III. P(H ∩ S)
 IV. P(H ∪ S)
		8 marks
		
		2 marks
		2 marks
		2 marks
		2 marks

3) In a group of 25 people, 14 like pizza and 16 like hamburger. One person likes neither pizza nor hamburger.
 	
  I.   Represent the situation using a Venn diagram.
What is the probability that a person randomly selected:
 	
  II.   Likes pizza?
 III. Likes pizza, knowing that he/she likes hamburger?
		5 marks
		
		2 marks
		
		1 mark
		2 marks

EXAM 2020-2021 : MATHEMATICS 4 PERIODS

PART A		
A2 STATISTICS	**Pag. 1/1**	**Marks**

4) The following histogram represents the height of the plants of the new garden. | **10 marks**
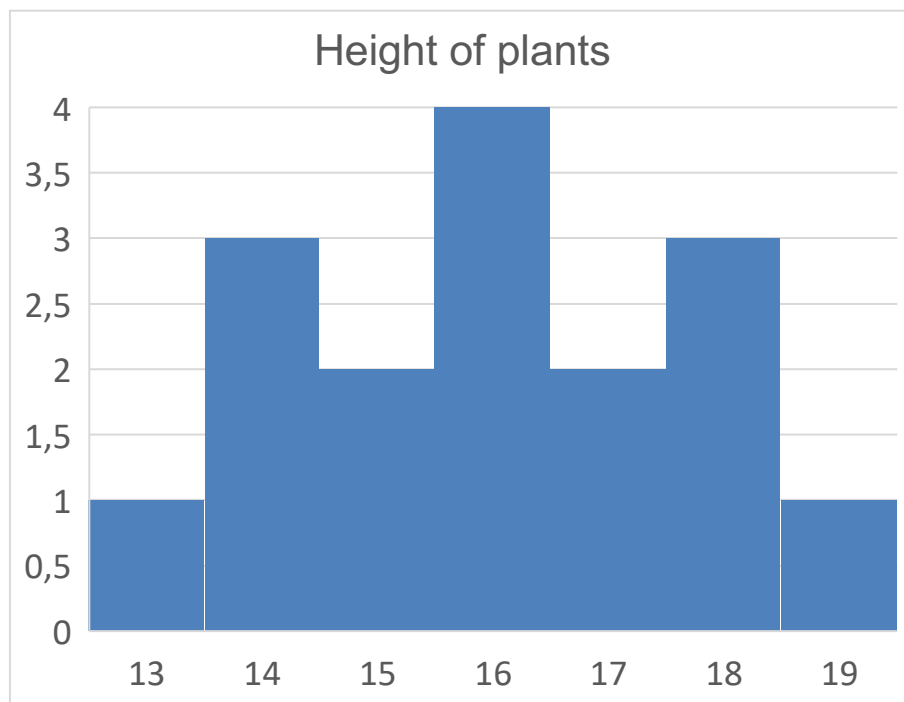
Height of plants

I. Fill in the table below using the data from the histogram. | 2 marks

height (cm)							
frequency							

II. Determine the number of plants. | 2 marks

III. Determine the mode. | 2 marks

IV. Determine the mean. | 2 marks

V. Determine the median. | 2 marks

EXAM 2020-2021 : MATHEMATICS 4 PERIODS

PART A		
A3 - 3D GEOMETRY	**Pag. 1/1**	**Marks**
5) Given a cube of side 3 m:		**15 marks**
i. Draw the cube on paper.		3 marks
ii. Determine the length of a face diagonal of the cube.		3 marks
iii. Determine the length of a body diagonal of the cube.		3 marks
iv. Determine the volume of the cube		3 marks
v. Determine the surface of the cube		3 marks

EXAM 2020-2021 : MATHEMATICS 4 PERIODS

POINTS PUNTEGGIO POINTS	MARK VOTO NOTE	PERFORMANCE INDICATOR DESCRITTORE DI PERFORMANCE DESCRIPTEUR DE NIVEAUX
97 - 100	10	Excellent (eccellente)
93 - 96.5	9.5	Excellent
90 - 92.5	9	
85 - 89.5	8.5	Very good (molto buono)
80 - 84.5	8	Très bon
75 - 79.5	7.5	Good (buono)
70 - 74.5	7	Bon
65 - 69.5	6.5	Satisfactory (discreto)
60 - 64.5	6	Satisfaisant
55 - 59.5	5.5	Sufficient (sufficiente)
50 - 54.5	5	Suffisant
■	■	■
45 - 49.5	4.5	Failed (weak) - (insufficiente) Insufffisant/Echec
40 - 44.5	4	
35 - 39.5	3.5	
30 - 34.5	3	
20 - 29.5	2.5	Failed (very weak) (gravemente insufficiente) Très insuffisant/Echec
10 - 19.5	2	
0 - 9.5	0 - 1.5	