પુના International School
Shree Swaminarayan Gurukul, Zundal

Examination PA-3 2020 – 21					
Student Name				**Grade** 9^{th}	
Date				**Subject**	**MATHEMATICS**
		Time		**Total Marks**	**50**

Time Allowed: 90 minutes **Maximum Marks: 50**

General Instructions:

- **The question paper contains three parts A, B and C**
- **Section A consists of 7 questions of 2 mark each. Any 6 questions are to be attempted**
- **Section B consists of 7 questions of 3 marks each. Any 6 questions are to be attempted**
- **Section C consists of 5 questions of 5 marks each. Attempt any 4 questions.**

Section A

Section A consists of 7 questions of 2 mark each. Any 6 questions are to be attempted [2 X 6= 12]

1. A coin tossed 1000 times with following frequencies: heads: 455, tails: 545 find p (Heads) .
2. students LIKES DISLIKE

   135 65

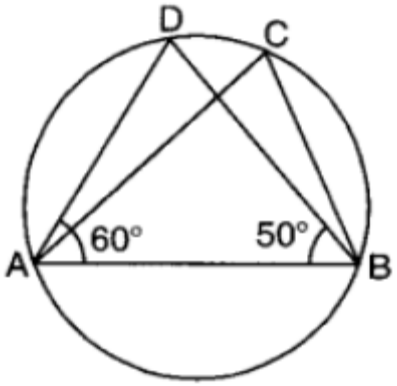
   Find the probability students like maths subject
3. Divide $3x^2 + x - 1$ by $x + 1$
4. Equal chord of a circle subtend equal angles at the centre.
5. Draw different pairs of circles. How many points does each pair have in common?
6. Find the value of the polynomial $5x - 4x^2 + 3$ at $x = 1$
7. Write the coefficients of x^2 in each of following: (i) $2 + x^2 + x$ (ii) $2 - x^2 + x^3$

Section B

Section B consists of 7 questions of 3 mark each. Any 6 questions are to be attempted [3 X 6= 18]

8. Using factor theorem to determine g(x) is factor of p(x)

   $P(x) = x^3 - 4x^2 + x + 6$, $g(x) = x - 2$
9. Expand $(2x + y - z)^2$
10. Factorise: $2x^2 + 7x + 3$
11. Evaluate the product without multiplying: 103 x 107
12. Verify $x^3+y^3 = (x + y)(x^2-xy+y^2)$
13. In figure, if $\angle DAB = 60°$, find $\angle ACB$



14. Eleven bags of wheat flour, each marked 5 kg, actually contained the following weights of flour (in kg)

    4.97, 5.05, 5.08, 5.03, 5.00, 5.06, 5.08, 4.98, 5.04, 5.07, 5.00 find the probability that any of these bags chosen at random contains more than 5 kg of flour

Section C

Section A consists of 5 questions of 5 mark each. Any 4 questions are to be attempted [5 X 4= 20]

15. factorise : x^3-3x^2-9x-5
16. The record of a weather station shows that out of the past 250 consecutive days, its weather forecasts were correct 175 times. (i) What is the probability that on a given day it was correct? (ii) what is the probability that it was not correct on a given day ?
17. Prove that a cyclic parallelogram is a rectangle.
18. 41 Find the value of K, if x-1 is a factor of P(x): (i) $x^2+ x +k$ (ii) $kx^2 – 3x +k$
19. Factorise : (i) $x^2 – x – 90$ (ii) $x^2 + 3x - 88$