પુ॰ના International School
Shree Swaminarayan Gurukul, Zundal

SAMPLE PAPER					
Student Name				**Grade 10th**	
Date				**Subject**	**MATHEMATICS**
		Time		**Total Marks**	**80**

General Instruction:

1. Questions from 1 to 20 are carries 1 Marks each.
2. Questions from 21 to28 are carries 2 Marks each.
3. Question from 29 to 38 carries 3 Marks each.
4 Question from 39 to 46 carries 4 Marks each.

Section – A **[1X 20= 20]**

Solve 1 to 20 questions each carry 1 mark

1. Which of the following is the correct HCF of the 108 and 288?

(A) 108 (B) 12 (C) 288 (D) 36

2. Three numbers are in the ratio 3: 4: 5 and their LCM is 1200 then their HCF is

(A) 40 (B) 60 (C) 20 (D) 120

3. If α is such that $f(\alpha) = 0$, then it is called

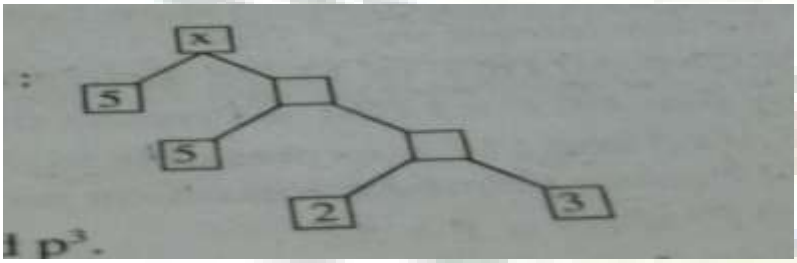
(A) Zero of a polynomial (B) Degree of a polynomial

(C) Coefficient of variable (D) none of this

4. The pair of zeros of the polynomial $2x^2 + 14x + 20$ is

(A) 2 and 5 (B) -2 and -5 (C) 2 and -5 (D) -2 and 5

5. Find the value of x



(A) 40 (B) 150 (C) 60 (D) 80

6. If α and α and β are the zeros of $x^2 - 8x + \gamma$, such that $\alpha - \beta = 2$, then γ is

(A) 8 (B) 60 (C) 22 (D) 15

7.. Which of the following is the correct HCF of the 108 and 288?

(A) 108 (B) 12 (C) 288 (D) 36

8. Find the greatest possible length which can be used to measure exactly the length 4m 95 cm and 16m 65 cm

(A) $3^2 \times 2^2$ cm (B) 3×5^2cm (C) 3 x 3 cm (D) $3^2 \times 5$ cm

9.Every positive odd integer is of the form

(A) 2q + 1 (B) 3q (C) 2q (D) 3q + 1

10. Find the greatest possible length which can be used to measure exactly the length 4m 95 cm and 16m 65 cm

(A) $3^2 \times 2^2$ cm (B) 3×5^2cm (C) 3 x 3 cm (D) $3^2 \times 5$ cm

Fill the blank

11. A tangent to a circle intersects it in _____ point(s)

12. A line intersecting a circle in two points is called a _____.

13. A circle can have _____ parallel tangents at the most.

14. The common point of a tangent to a circle and the circle is called _____.

15. All circles are _____ (congruent, similar)

16. If is one root of the quadratic equation $x^2-2kx-6=0$, then find the value of k

17. What is the HCF of the smallest prime number and the smallest composite number?

18. Find the distance of a point (x, y) from the origin.

19. If the distance between the point (4 , k) and (1, 0) is 5, then what can be the possible values of k?

20. Prove that $\sqrt{2}$ is irrational number

Section – B **[2X6=12]**

Solve any 6 question each carry 2 marks

21. Using Euclid's division algorithm, find the HCF of 405 and 2520

22. Using prime factorization, find the HCF and LCM of 36 and 84

23. Find the zeros of the given quadratic polynomial and verify the relationship between the zer*os* and the coefficients: $6x^2 -7x -3$

24. Find the quadratic polynomial such that sum of its zeros is 10 and difference between zeros is 8.

25. Two concentric circles are of radii 13 cm and 5 cm. Find the length of the chord of the larger circle, which touches the smaller circle

26. E and F are points on the sides PQ and PR respectively of a ΔPQR. For each of the following cases, state whether EF ‖ QR:

(i) PE = 3.9 cm, EQ = 4 cm, PF = 3.6 cm and FR = 2.4 cm
(ii) PE = 4 cm, QE = 4.5 cm, PF = 8 cm and RF = 9 cm

27. . Draw a circle and two lines parallel to a given line such that one is a tangent and the other, a secant to the circle.

28.. Find a quadratic polynomial with the given numbers as the sum and product of its zeroes respectively:

$\frac{1}{4}$, -1

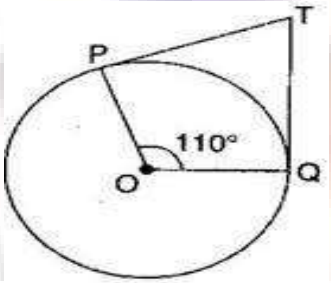
Section – C **[3X8=24]**

Solve any 8 question each carry 3 marks

29.. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a Point Q so that OQ = 12 cm. Then find length PQ.

30.. If a line drawn parallel to one side of a triangle to intersect the other two side in distinct point, other two sides are divided in the same ratio. (B P T Theorem)

31. In figure, if TP and TQ are the two tangents to a circle with centre O so that ∠POQ = 180° Then ∠PTQ is equal to:



32 If tangents PA and PB from a point P to a circle with centre O are inclined to each Other at angle of 80°, then find value ∠POA.

33. Prove that the tangents drawn at the ends of a diameter of a circle are parallel.

34. The HCF of two numbers is 145 and their LCM is 2175. If one of the numbers is 725, find the other.

35. Write Pythagoras theorem.

36.Given that HCF (306,657)=9 ,find the LCM(306,657).

37. Prove that the tangents drawn at the ends of a diameter of a circle are parallel.

38. A bag contains lemon flavoured candles only. Malini takes out one candy without looking into the bag. What is the probability that she takes out: (i) an orange flavoured candy? (ii) a lemon flavoured candy?

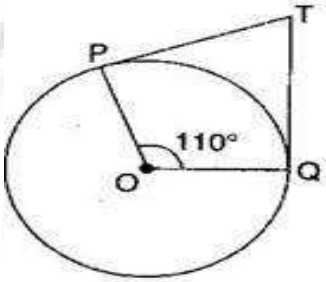
Section – D **(4 X 6 = 24)**

Solves any 6 question each carry 4 marks

39. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a Point Q so that OQ = 12 cm. Then find length PQ.

40. If a line drawn parallel to one side of a triangle to intersect the other two side in distinct point, other two sides are divided in the same ratio. (B P T Theorem)

41.In figure, if TP and TQ are the two tangents to a circle with centre O so that ∠POQ = 180° Then ∠PTQ is equal to:

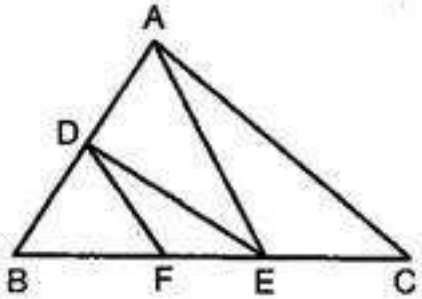


42. If tangents PA and PB from a point P to a circle with centre O are inclined to each Other at angle of 80°, then find value ∠POA.

43. Prove that the tangents drawn at the ends of a diameter of a circle are parallel.

44. A piggy bank contains hundred 50 p coins, fifty Re. 1 coins, twenty Rs. 2coins and ten Rs. 5 coins. If it is equally likely that of the coins will fall out when the bank is turned upside down, what is the probability that the coin: (i) will be a 50 p coin? (ii) will not be a Rs.5 coin?

45 In the given figure, DE ‖ AC and DF ‖ AE. Prove that $\frac{BF}{FE} = \frac{BE}{EC}$



46 If tangents PA and PB from a point P to a circle with centre O are inclined to each

Other at angle of 80°, then find value ∠POA.