# પુ·ના International School

Shree Swaminarayan Gurukul, Zundal

| Examination P A 2020 – 21 | | | | | |
|---|---|---|---|---|---|
| **Student Name** | | | | **Grade** $10^{th}$ | |
| **Date** | **17/07/20** | | | **Subject** | **MATHEMATICS** |
| | | **Time** | | **Total Marks** | **50** |

Choose correct option [1 X 15 = 15]

1. H.C.F of 12 and 50 is
   (A) 2 (B) 4 (C) 12 (D) None
2. What is the LCM of 4 and 19 is
   (A) 1 (B) 4 (C) 19 (D) 76
3. The zero of p(x) = ax + b is
   (A) a (B) b (C) $-\frac{b}{a}$ (D) $-\frac{a}{b}$
4. The maximum number of zeros that a polynomial of degree3 can have is
   (A) 1 (B) 2 (C) 3 (D) None
5. The area of two similar triangles are 25 sq cm and 36 sq cm, if the median of the smaller Triangle is 10cm, then the median of the larger triangle
   (A) 12 cm (B) 15cm (C) 10cm (D) 18cm
6. The perimeters of two similar triangles are 40cm and 50cm. Then, the ratio of the areas Of the first and second triangles is
   (A) 4:5 (B) 5:4 (C) 25:16 (D) 16:25
7. How many tangents can be drawn to a circle at any point of it
   (A) 1 (B) 2 (C) 3 (D) none of these
8. How many tangents can a circle have?
   (A) Two (B) infinitely many (C) One (D) Zero
9. Which of the following is the correct HCF of the 108 and 288?
   (A) 108 (B) 12 (C) 288 (D) 36
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) $3 \times 5^2$cm (C) 3 x 3 cm (D) $3^2 \times 5$ cm
11. Every positive odd integer is of the form
    (A) 2q + 1 (B) 3q (C) 2q (D) 3q + 1
12. A number n is said to be a perfect, if the sum of the all its divisors excluding n itself is equal to n. An example of perfect number is
    (A) 6 (B) 9 (C) 15 (D) 21
13. Pick out odd one.

(A) HCF (7, 24) (B) HCF (48,115) (C) HCF (9,106) (D) HCF (42, 455)

14. The maximum number of students among whom 1001 pens and 910 pencils can be distributed in such a way that each student gets the same number of pens and same number of pencil is

(A) 91 (B) 910 (C) 1001 (D) 1911

15. Let n be the greatest number that divide 1305 coma 4665 and 6905 leaving the same remainder in each case then sum of the all the digits of n is

(A) 4 (B) 5 (C) 6 (D) 8

**Fill the blank** **[1 X 9 = 9]**

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

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

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

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

20. All circles are _____ (congruent, similar)

21. All squares are _____(similar, congruent)

22. All _____ triangles are similar. (isosceles, equilateral)

23. Two polygons of the same number of sides are similar, if

(a) Their corresponding angles are _____ and

(b) Their corresponding sides are _____. (Equal, proportional)

**Solve: Each carry two marks (Any seven)** **[2 X 7 = 14]**

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

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

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

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

28. 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

29. E and F are points on the sides PQ and PR respectively of a $\Delta$PQR. 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

30. 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.

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

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

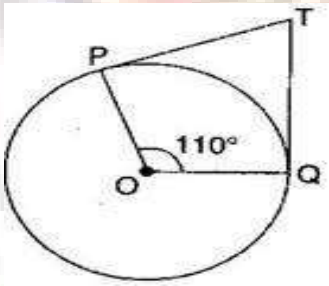
$\frac{1}{4}$, -1

**Solve: Each carry four marks (Any three)** **[4 X 3 = 12]**

33. 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.

34. 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)

35. 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:




36. 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.

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