V.V.M ENGLISH HIGH SCHOOL

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First School level Revision Exam: 2019 - 20

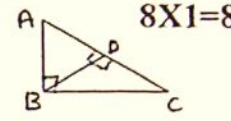**Class: 10th Std**   **Sub: Mathematics.**   **Marks: 80**   **Times: 3 hrs**

8X1=8

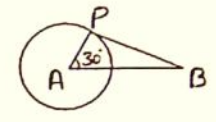1. In fig. $\triangle BDC \sim \triangle ABC$ then BC^2 is

   a) AC.CD   b) AC.AD   c)AD.CD   d) AB.BC

2. Sum of all the first n terms of even natural numbers is

   a) $n(n+1)$ b) $n(n+2)$ c) n^2 d) $2n^2$

3. In fig $\angle PBA$ is

   a) $60°$ b) $30°$ c) $45°$ d) $90°$

4. The solutions for the equation $x + y = 10$ & $x - y = 2$ are
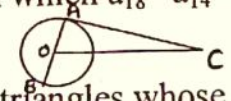
   a) x= 6,y=4   b) x=4,y=6   c) x=7,y=3   d) x=8,y=2

5. If the areas of two similar triangles are equal then they are

   a) Equal   b) congruent   c) similar   d) proportional

6. If the nth term of an AP is 3n+7 then common difference is

   a) 5   b) 3   c) 7   d) 10

7. The sum of two numbers is 8 & their difference is 2 then the number are

   a) 5 & 3   b) 6 & 4   c) 4 & 2   d) 4 & 4

8. Circles having same radii but different circles are called ------------ circles.

   a) congruent   b)concentric   c) equal   d) intersecting

8X1 = 8

9. State basic proportionality theorem

10. If the lines $3x + 2ky = 2$ & $2x + 5y + 1 = 0$ are parallel, then find value of k.

11. Find the common difference of an AP in which $a_{18} - a_{14} = 32$

12. In the fig $\angle BOC = 130°$ find $\angle ACO$

13. What is the ratio of areas of two similar triangles whose sides are in the ratio 3 : 4 ?

14. Write the general form of pair of linear equation in two variables.

15. Define tangent of a circle

16. In the AP 2, x, 26 find the value of x.

8X2=16

17. Solve $3x + 4y = 10$ and $2x - 2y = 2$ suitable method.

18. Find the sum of first 25 terms of an AP whose nth term is given by $a_n = 2 - 3n$

19. Two concentric circles are of radii 5cm & 3cm .Find the length of the chord of the larger circle which touches the smaller circle.

20. A ladder 17m long reaches a window of a building 15m above the ground. Find the distance of the foot of the ladder from the building.

21. A quadrilateral ABCD is drawn to a circumscribe a circle .P.T AB + CD = AD + BC.
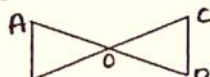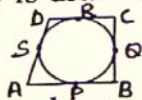
22. How many two digit numbers are divisible by 6?

23. In fig. OA.OB=OC.OD show that $\angle A = \angle C$ and $\angle B = \angle D$

24. Sum of ages of a father & son is 40 years. If the father's age is three times that of his son, find their present age. **(OR)**

The sum of two numbers is 137 and their differences are 43. Find the numbers.

25. BL & CM are medians of a triangle ABC right angled at A. P.T $4(BL^2 + CM^2) = 5BC^2$ **9X3=27**

(OR) D & E are points on the sides CA & CB respectively of a triangle ABC right angled at C. Prove that $AE^2 + BD^2 = AB^2 + DE^2$

26. A manufacturer of TV sets produced 600 sets in the third year and 700 sets in the seventh year. Find i) production in the 2nd year ii) production in the 9 year iii) total production in first 11 years.

27. Prove that the lengths of tangents drawn from an external point to a circle are equal. **(OR)** Prove that the tangent at any point of circle is perpendicular to the radius through contact.

28. If we add 1 to the numerator & subtracted 1 from the denominator a fraction reduces to 1. It becomes $\frac{1}{2}$ if we only add 1 to the denominator. What is the fraction? **(OR)** A two digit number is 3 more than 4 times the sum of its digits. If 18 is added to the number, the digits are reversed. Find the number.

29. Sides AB & AC & median AD of $\triangle ABC$ are proportional to sides PQ & PR & medium PM of $\triangle PQR$ show that $\triangle ABC \sim \triangle PQR$.

30. The sum of 3rd & 7th term of an AP is 6 & their product is 8. Find the sum of first 20 terms of the AP. **(OR)** The 16th term of an AP is five times its third term. If its 10th term is 41, then find the sum of first fifteen terms.

31. In fig. a circle is inscribed in a $\triangle PQR$ with PQ =10cm, QR=8cm, PR=12cm, find the lengths of QM, RN & PL
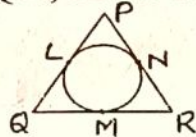
32. Two boys & girls can do a piece of work in 4 days .It is done by 4 boys & 4 girls in 3 days. How long would it take for one boy or one girl to do it?
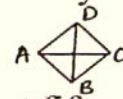
33. In Rhombus ABCD prove that $AC^2 + BD^2 = 4AB^2$

34. In an AP of 50 terms the sum of first ten terms is 210 & sum of last fifteen terms is 2565.find AP **(OR)** The sum of four consecutive terms which are in an AP is 32 and the ratio of the product of the first and the last term to the product of two middle terms is 7:15. Find the number. **4X4=16**

35. Prove that the ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding altitudes.

36. A boat goes 30km upstream & 44km downstream in 10hours. In 13 hours it can go 40km upstream & 55km downstream determine speed of the stream & speed of boat in still water.

37. In the fig. find the sides AB & AC.

38. 5 bats & 7 balls together cost Rs 50 whereas 7 bats & 5 balls together cost Rs 46. Find the cost of one bat & 1 ball by any one algebraic method & graphically and verify your answer in algebraic method and graphical method. **1X5=5**