**Sample Paper –2013**

**Sub: Mathematics**

**Class X**

M.M 90

#  Time: 3 Hrs

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| **No** | **Questions** | **No** | **Questions** |
| **1.****2.****3.****4.****5.****6.****7.****8.****9.****10.****11.****12.****13.****14.****15.****16.****17.****18.****19.****20.** | ***General Instructions:*** ***All questions are compulsory.******The question paper consists of 34 questions*** ***Question No’s. from 1 to 8 , 1 mark each,******Question No’s. from 9 to 14 , 2 mark each,******Question No’s. from 15 to 24 , 3 mark each,******Question No’s. from 25 to 34, 4 mark each.*****Find the co-ordinate of the centroid of the triangle whose vertices are (2, 3), (-4, 6) and (8, 3).****Find the 19th term of AP: 15, 22, 29….****What is the distance of the point (-5, 3) from the origin.****If PQ and PR are the tangents to a circle with center O and radius 4 from point P then find the perimeter of Quadrilateral PQOR. If PQ=11cm.** **If one of the root of the quadratic equation x²-7x+k=0 is 5. Find the value of k.****Find the distance of the point (2,-3) from the mid point of the line joining (1,4) and (5,3)****What is the probability of having 53 Sunday in a non leap year.****A circle is inscribed in a triangle with sides 8, 15 and 17cm. Find the radius of the circle.****If the points (1, 2), (4, y), (x, 6) and (3, 5) are the vertices of the parallelogram. Find the value of x and y.****A die is tossed then find the probability of getting (i) a Prime no. (ii) a Multiple of 5.****Find the 20th term from the end of** **AP:5,12,19………….215****A box containing tickets numbered from 11 to 25 find the probability of getting (i) a prime number (ii) a odd number.****Solve the quadratic equation: 9x² - 16x -4=0****Find the co-ordinate of a point on y-axis that is equidistant from the points (4,-3) and (5, 2).****Two tangents TP and TQ are drawn to a circle with centre O from an external point T. Prove that ∠PTQ = 2∠ OPQ.****Find the area of the quadrilateral whose vertices taken in order are A (- 5, 7), B (- 4, -5), C (- 1,-6) and D (4, 5).****A hollow sphere of internal and external diameters 4cm and 8cm respectively is melted into a cone of base diameter 8cm. Calculate the height of the cone.****A two digit number is four times the sum of its digits and also the twice of the product of its digits. Find the number.****The sum of the squares of two consecutive odd numbers is 394. Find the number.****Two men standing on opposite sides of 400m high tower measures angle of elevation of its top as 45º and 60º respectively. Find the distance between them.** | **21.****22.****23.****24.****25.****26.****27.****28.** **29.****30.****31.****32.****33.****34.** | **In fig PA and PB are tangents to the circle drawn from an external point P. CD is a third tangent touching the circle at Q. If PB = 10 cm and CQ = 2 cm, what is the length of PC?** **Construct a triangle similar to a given ∆ABC in which AB = 4 cm, BC = 6 and AC =5cm such that each side of the new triangle is 3/4 of the given ∆.****A card is drown from a deck 52 cards find the probability of getting(i)A red queen, (ii) A face card, (iii) a card of club.****Two circles touch externally. The sum of the area is 130π sq cm and the distance between their centres is 14cm. Find the radii of the circles.****The area of an equilateral triangle is *49√3 cm2*. Taking each angular point as centre, a circle is described with radius equal to half the length of the side of the triangle. Find the area of the triangle not included in the circles.****The sum of how many terms of AP 1,3,5...is 256.****The rain water collected on the roof of the building of dimensions 22m x 20m, is drained into a cylindrical vessel having base diameter 2m and height 3.5m. If the vessel is full upto the brim, find the height of rain water on the roof.****Find the value of *k* so that the quadratic equation has equal roots: 2x2-(k-2)x+ 1 = 0** **The diameters of the ends of a frustum of a cone 45 cm high are 56 cm and 14 cm. Find its volume and the curved surface area.****Prove that the tangents drawn from the external point to a circle are equal in length. Also find the radius of the Circle. If the length of tangent from a point 13cm away from origin is 12 cm.** **Find the sum of all two digit number which when divided by 4 leaves the remainder 1.****The angle of elevation of a cloud from a point 200m above a lake is 30º and the angle of depression of its reflection in the lake is 60º. Find the height of the cloud above the lake.****Marbles of diameter 1.4cm are dropped into a cylinder of diameter 7cm containing some water. Find the number of marble so that water level rise by 5.6cm****The angle of depression of the top and bottom of a building from the top of 120m high tower are 30º and 60º. Find the height of the building.*****Best of Luck*** |

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