



APEEJAY SVRAN GLOBAL SCHOOL
SESSION-2020-21
TERM-I END EXAMINATION
SUBJECT-MATHEMATICS
CLASS- X

Name: _____

M.M: 40

Date: _____

Duration: 1 hour 30 mins

General Instructions :

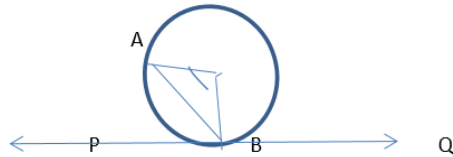
>All the questions are compulsory.

>The question paper is divided in 4 sections – A , B , C , D. Section A consist of 5 questions (MCQ) of 1 mark each. Section B consist of 4 questions of 2 marks each. Section C consist of 5 questions of 3 marks each. Section D consist of 3 questions of 4 marks each.

>Submission of rough sheet used for calculations along with answer sheets , is mandatory.

SECTION A

- The HCF & LCM of 12 , 21 & 15 respectively are
 a) 3 , 140 b) 12 , 420 c) 3 , 420 d) 420 , 3
- If α and β are the zeroes of the polynomial $x^2 - 4x + 1$, then the value of $\alpha + \frac{1}{\alpha}$
 a) 1 b) -1 c) -4 d) 4
- The point on the x axis which is equidistant from (-4 , 0) and (10 , 0) is
 a) (7 , 0) b) (5 , 0) c) (0 , 0) d) (3 , 0)
- In the given figure PQ is tangent to the circle with centre at O , at point B . If $\angle AOB = 100$ then $\angle ABP$ is equal to



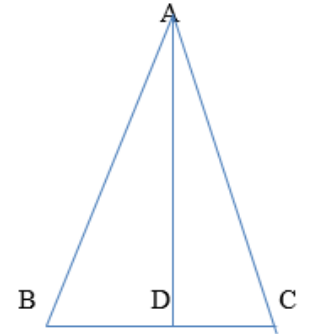
- 50 b) 40 c) 60 d) 80
- Simplest form of $\frac{1 + \tan^2 A}{1 + \cot^2 A}$
 a) $\tan^2 A$ b) $\cot^2 A$ c) $\operatorname{cosec}^2 A$ d) $\cos^2 A$

SECTION B

- Find k if sum of zeroes of the polynomial $x^2 - (k-4)x + 2(4k-7)$ is half their product.
- Solve the following quadratic equation for x : $4x^2 + 4bx - (a^2 - b^2) = 0$
- If p $(\frac{a}{3}, 4)$ is the mid point of the line segment joining the points Q $(-6, 5)$ and R $(-2, 3)$, then find the value of a.
- Two concentric circles are of radii 5 cm and 3 cm . Find the length of the chord of the larger circle which touches the smaller circle .

SECTION C

- Find the HCF and LCM of 404 and 96 and verify that $\text{HCF} \times \text{LCM} = \text{Product of the two given numbers}$.
- The ratio of incomes of two friends Jasmine and Aman is 9 :7 and the ratio of their expenditure is 4 :3. If each of them saves rupees 6000/ month , find their monthly incomes. Also if each of them donates
- In figure $\angle B$ is less than 90 degree and AD is perpendicular to BC .
 Prove that $AC^2 = AB^2 + BC^2 - 2 BC \cdot BD$



- Find the coordinates of the points which divide the line segment joining the points A $(2, -3)$ and B $(-4, -6)$ into three equal parts .
- Prove that $\sqrt{\frac{1+\sin A}{1-\sin A}} = \sec A + \tan A$

SECTION D

- Solve $\frac{1}{x-3} + \frac{2}{x-2} = \frac{8}{x}$, $x \neq 0, 2, 3$
- For an A.P. , it is given that the first term is 5 , common difference is 3 and the last term is 50. Find the number of terms and sum of all the terms .
- A statue 1.6 m tall , stands on the top of the pedestal. From a point on the ground , the angle of the elevation of the top of the statue is 60 degree and from same point the angle of elevation of the top of the pedestal is 45 degree. Find the height of the pedestal.