SpellIndia
INDIA's No. 1
SPELLING BEE
Preparatory Study Material Provider
www.phonicsestore.com

ICSE ACADEMY
www.spellbeeacademy.com

Pati's

MCQs

for

ICSE

Class 10

Mathematics

MCQ SET 1

Questions ONLY

A Collection of Questions from Prelim exam papers of various ICSE schools

How to Prepare for ICSE Class 10 exams : Free Resources

Please click on subject to proceed further.

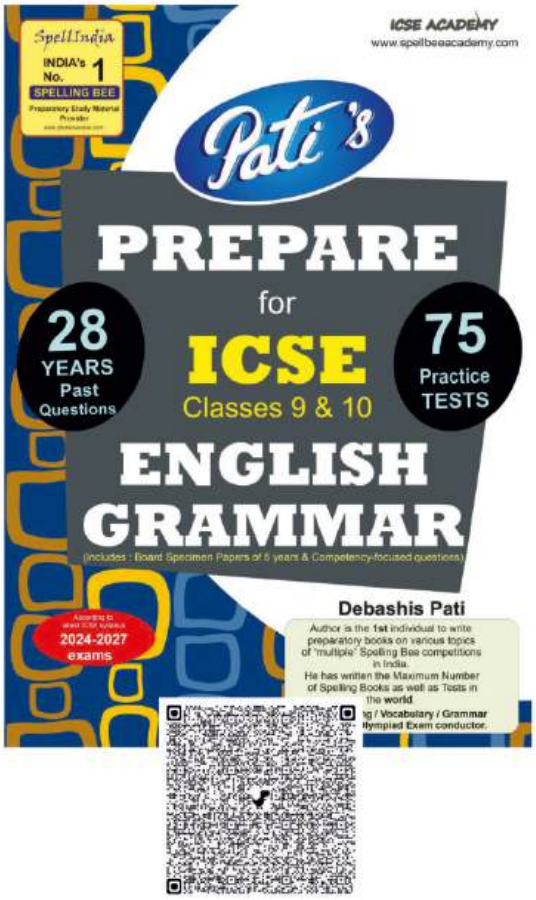
We will keep adding resources here till "March 2026".

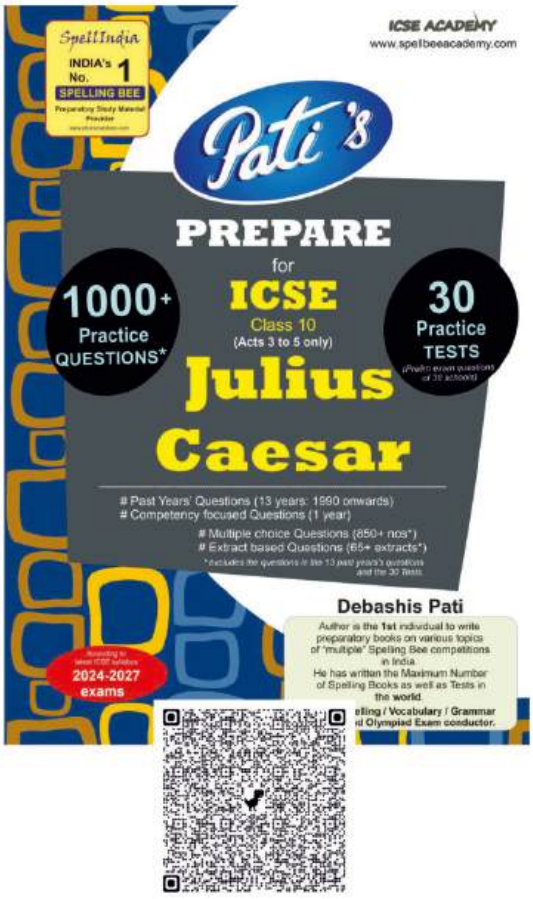
So, save this link, keep visiting and stay updated.

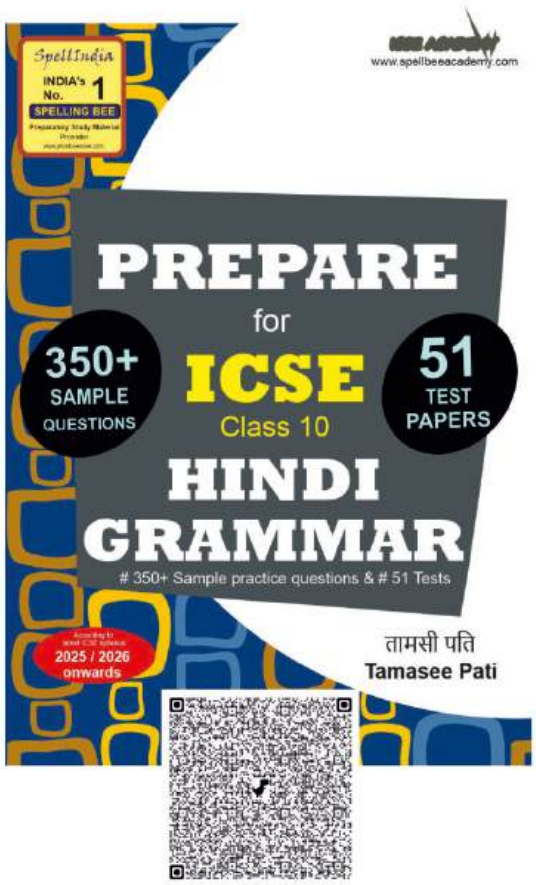
(Resources include : Syllabus, Past Year Papers, Specimen Papers, Competency based Questions, Books pdf downloadable, 350+ Term Papers / Prelim Papers of various schools - across subjects, etc.)

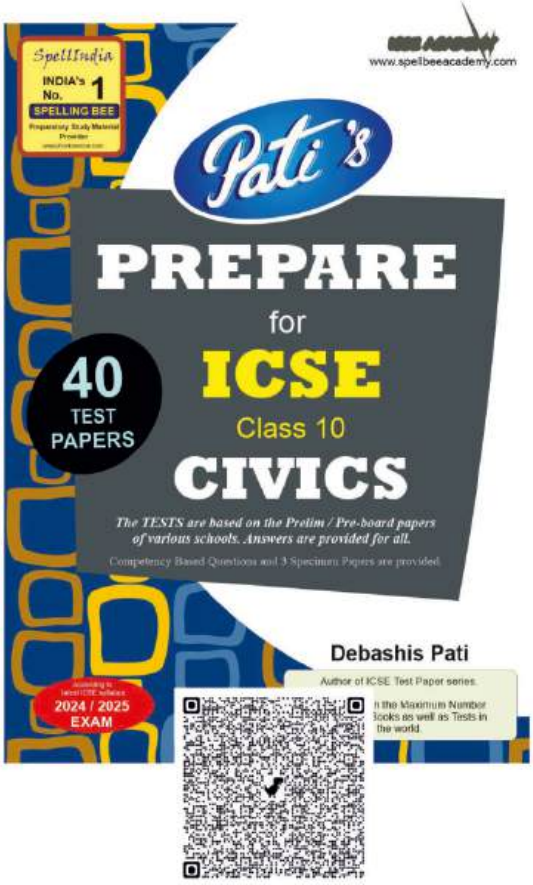
01 English Literature	02 English Language	03 Geography	04 History & Civics
05 Physics	06 Chemistry	07 Mathematics	08 Biology
09 Computer Applications	10 Physical Education	11 Hindi	12 Commercial Studies
13 Economics	14 Technical Drawing	15 Environmental Science	16 Home Science
17 Gujarati	18 Marathi	19 French	

SCAN QR code to buy the book at amazon NOW.



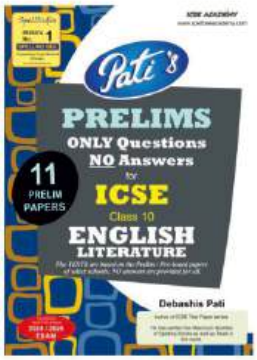


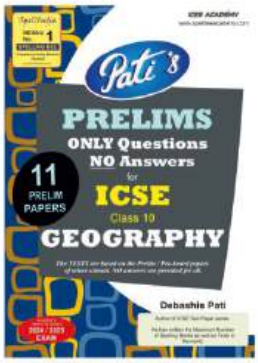


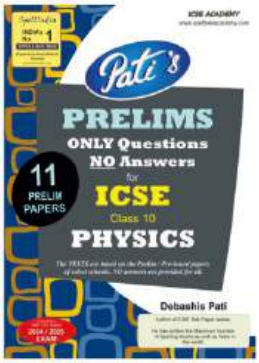


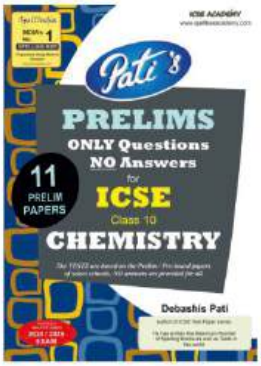
Pati's ICSE ACADEMY

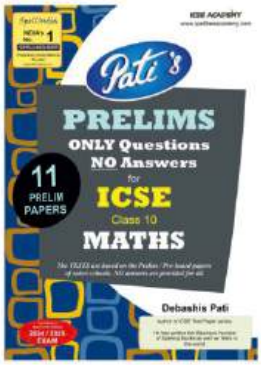
Scan QR code for Free Access to
500+ Prelim Papers across 20 subjects

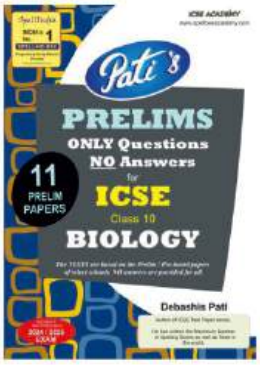


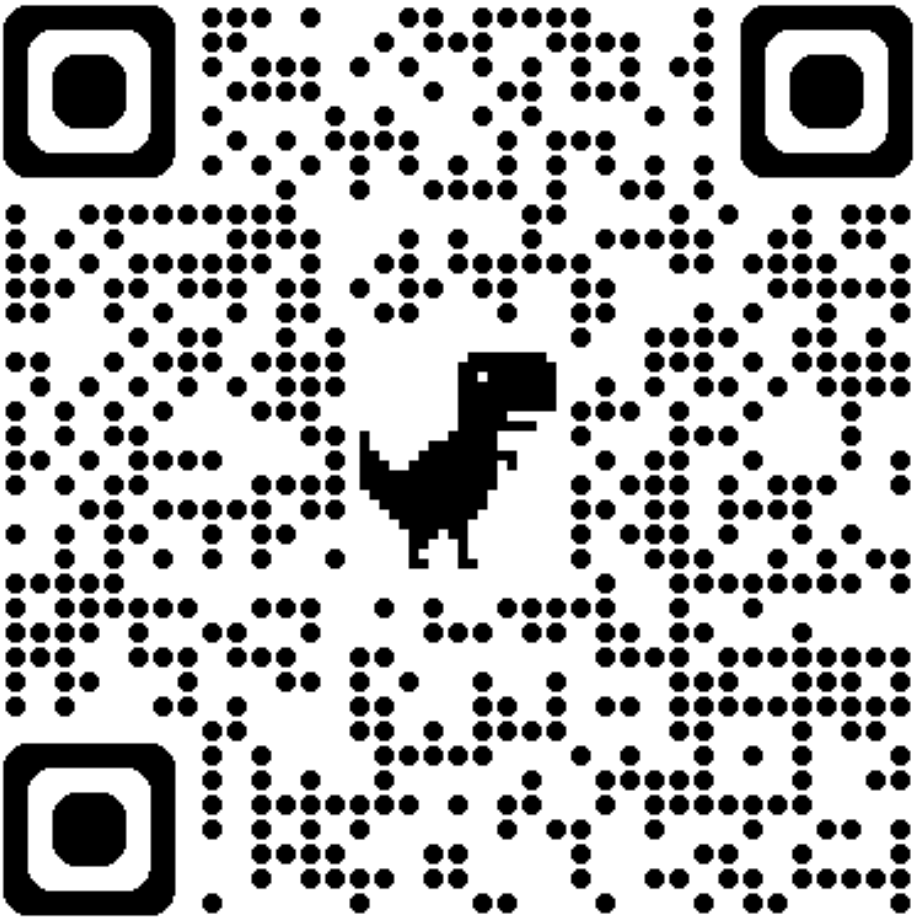










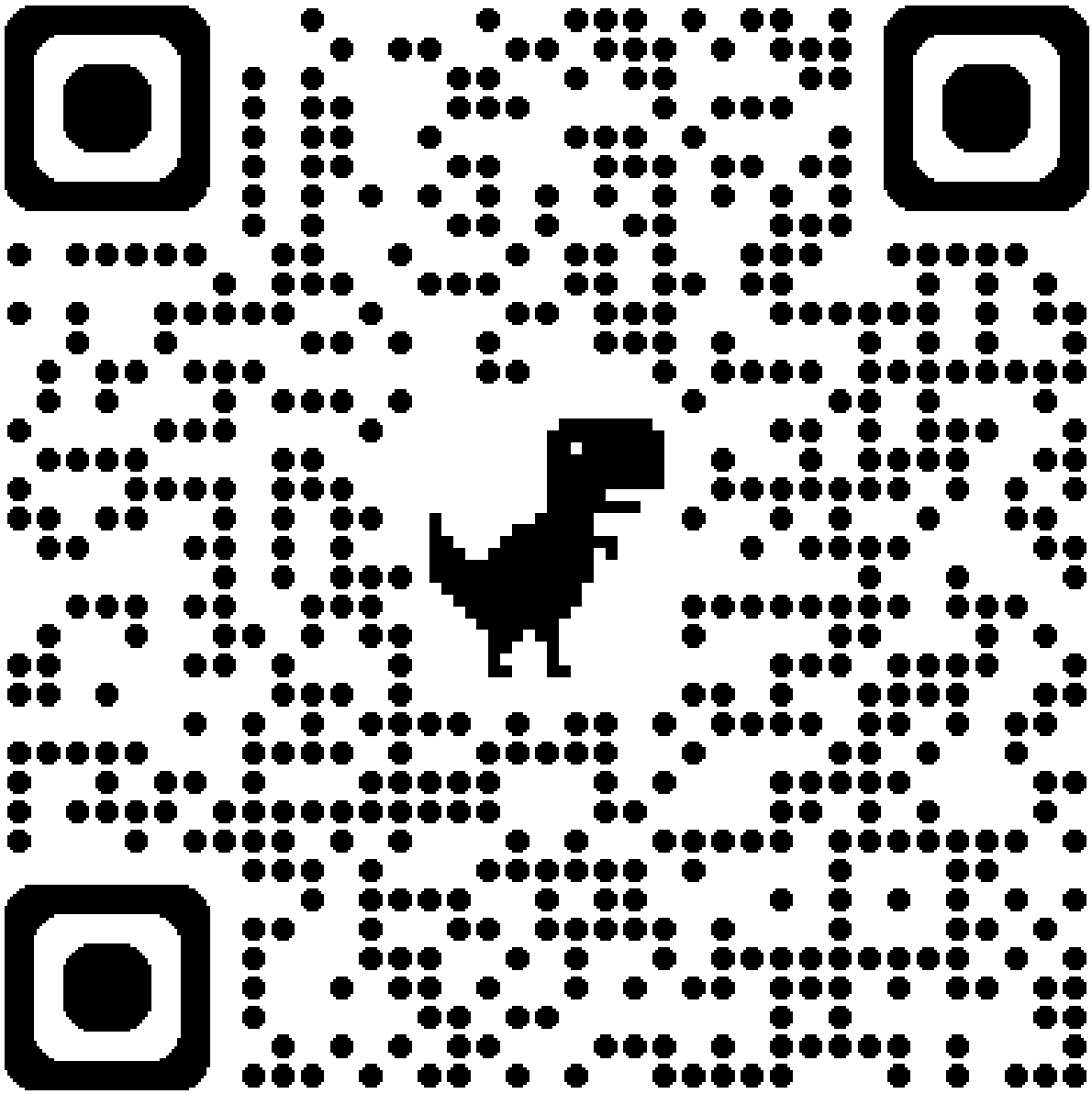


Pati's ICSE ACADEMY

Prepare for ICSE CLASS 10 Mathematics

Free Resources

SCAN QR CODE Now



ICSE ACADEMY

Mathematics MCQs

MCQ SET 1

240 MCQs

Q. Choose the correct answers to the questions from the given options.

Note : Answers are provided at the start.

Test 1

ST. GREGORIOS HIGH SCHOOL

PRELIMINARY EXAMINATION

MATHEMATICS

STD:X | **No. of pages: 13** | **MARKS: 80**

DATE: | **TIME: $2\frac{1}{2}$ hours**

The first 15 minutes are for reading only. No writing work is to be done during this time. The writing time is excluding this reading time.

*Attempt all questions from **Section A** and any four questions from **Section B**.*

All working, including rough work, must be clearly shown, and must be done on the same sheet as the rest of the answer.

Omission of essential working will result in loss of marks.

The intended marks for questions or parts of questions are given in brackets [ ]

Mathematical tables are provided.

Section A

(Attempt all questions from this section)

Question 1 [15]

Choose the correct answers to the questions from the given options.

(Do not copy the question, write the correct answers only.)

(i) If A, B and C are square matrices of the same order, then which of the following is true?

(a) AB=I, which implies AB=BA

(b) AB=0, which implies A=0 or B=0

(c) $(AB)^2 = A^2B^2$

(d) AB=AC

(ii) When f(x) is divided by x-a, then f(a) is the:

(a) quotient

(b) remainder

(c) divisor

(d) dividend

(iii) If 81 is the discriminating factor of $2x^2 + 5x - k = 0$, then the value of k is equal to:

(a) 7

(b) -7

(c) 9

(d) -9

(iv) Jenny purchases an article at a price which includes 10% rebate on the marked price and 18% tax (under GST) on the remaining price. If she pays ₹ 9558 as the GST, then the marked price of the article is:

(a) ₹ 53,100

(b) ₹ 64,900

(c) ₹ 59,000

(d) ₹ 47,789

(v) John an architect used a scale factor 1:100 to design a site plan. If the actual car parking area for one car is 12.5 m^2, then the car parking area depicted in the blue print for 1000 cars is:

(a) 125 m^2

(b) 0.125 m^2

(c) 0.00125 m^2

(d) 1.25 m^2

(vi) If the 6th term of a Geometric Progression is 32 and its 8th term is 128, then the common ratio of the geometric progression is:

(a) -1

(b) -4

(c) 2

(d) 4

(vii) The equation for the line that goes through A (-2, 3) and has a slope equal to $\frac{1}{2}$ is:

(a) $2y = 5x + 6$

(b) $x + y = 9$

(c) $x - 2y = -8$

(d) $4x + 3 = y$

(viii) A cone and a cylinder have their heights in the ratio 4:5 and their diameters are in the ratio 3:2. The ratio of their volumes will be:

(a) 6:7

(b) 3:5

(c) 5:3

(d) 4:3

(ix) Two poles of height 20 m and $20+10\sqrt{3}$ m stand vertically on a plane ground. If the distance between the feet of the poles is 10 m, then the angle of elevation from the top of the first pole to the top of the second pole is:

(a) 20°

(b) 30°

(c) 40°

(d) 60°

(x) **Assertion (A):** The probability of an event that cannot happen or which is impossible, is equal to zero.

Reason (R): The probability lies between 0 and 1. Hence, it cannot be negativ

(a) A is true, R is false.

(b) A is false, R is true.

(c) both A and R are true

(d) both A and R are false.

(xi) If the points A (1, 2), O (0, 0) and C (a, b) are collinear, then:

(a) $a = -2b$

(b) $a = 2b$

(c) $a = -2b$

(d) $2a = b$

(xii) If $-3 < 2x + 5 < 9$, which of the following **IS NOT** a possible value of x?

(a) 0

(b) -1

(c) -2

(d) 2

(xiii) Which measures of central tendency get affected if the extreme observations on both the ends of a data arranged in a descending order are removed?

(a) Mean and mode

(b) Mean and Median

(c) Mode and Median

(d) Mean, Median and Mode

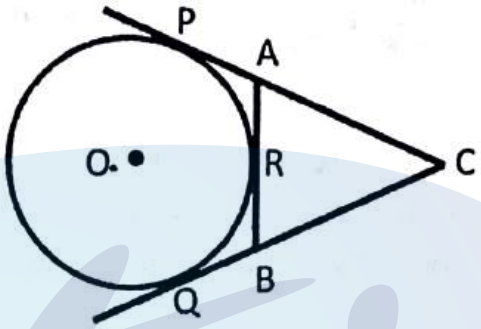
(xiv) In the given figure, CP and CQ are tangents to a circle with centre O. ARB is another tangent touching the circle at R. If CP = 11 cm and BC = 6 cm then the length of BR is:

(a) 6 cm

(b) 5 cm

(c) 4 cm

(d) 3 cm



(xv) $cos^4A - sin^4A$ is equal to:

(a) $2\cos^2A - 1$

(b) $2\cos^2A + 1$

(c) $2\sin^2A - 1$

(d) $2\sin^2A + 1$

Test 2

JOHNSON GRAMMAR SCHOOL-ICSE
KUNTLOOR, HYDERABAD.

PRE-FINAL - I EXAMINATION

CLASS-X

MATHEMATICS

Maximum Marks: 80

Time allowed: Two and half hours

Answer to this paper must be written on the paper provided separately.

You will not be allowed to write during first 15 minutes.

This time is to be spend in reading the question paper

The time given at the head of this paper is the time allowed for writing the answer

*Attempt all questions from **Section-A** and **any four** questions from **Section-B***

All working including rough work, must be clearly shown, and must be done on the same sheet as the rest of the answer.

Omission of essential working will result in loss of marks.

The intended marks for questions as parts of questions are given in the brackets [ ]

Mathematical tables are provided.

SECTION-A

(Attempt all questions from this Section)

Question 1

Choose the correct answers to the questions from the given options: **[15]**

(i) If $\begin{bmatrix} a-b \\ a+b \end{bmatrix} = \begin{bmatrix} 11 \\ 31 \end{bmatrix}$ then the value of ab is:

(a) 11

(b) 31

(c) 210

(d) 110

(ii) The sum of first 25 natural numbers is:

(a) 225

(b) 325

(c) 650

(d) 600

(iii) Which of the following points is invariant under reflection in the Y – axis:

(a) (8, 0)

(b) (0, 6)

(c) (-2, 8)

(d) (2, 8)

(iv) The vertices of a parallelogram in order are A(x,2), B(4,3), C(6,6) and D(3,5) then x is

(a) 1

(b) $\frac{7}{2}$

(c) $\frac{2}{7}$

(d) 4

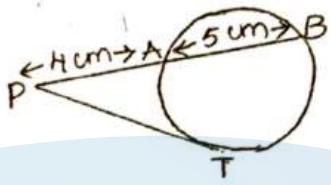
(v) In the given figure, the length of PT is:

(a) 9 cm

(b) 20 cm

(c) 6 cm

(d) 16 cm



(vi) If the length of the shadow of a tower is $\sqrt{3}$ times that of its height, then the angle of elevation of the sun is:

(a) 30^0

(b) 45^0

(c) 60^0

(d) 15^0

(vii) Which of the following cannot be the probability of an event?

(a) 0.5

(b) 5%

(c) $\frac{1}{2}$

(d) - 1.5

(viii) **Assertion: (A):** The value of tan θ increases as θ increases.

Reason (R): Tan θ is the product of tan and θ

(a) A is true, R is false

(b) A is false, R is true

(c) Both A and R are true

(d) Both A and R are false

(ix) If the rate of GST is 18%, then the amount of IGST collected on an article, which costs ₹27000, assuming that it is an intrastate trading is:

(a) ₹2430

(b) ₹ 4860

(c) ₹ 0

(d) ₹ 243

The values of K for which the quadratic equation $2x^2 - Kx + K = 0$ has equal roots is (are):

(a) 0 only

(b) 4

(c) 8 only

(d) 0, 8

(xi) If $x, 3, 12, y$ are in continued proportion then x and y are:

(a) $x = \frac{3}{4}, y = 48$

(b) $x = 4, y = 9$

(c) $x = 13, y = 3$

(d) $x = 1, y = 36$

(xii) If the lines $2x + 3y = 5$ and $Kx - 6y = 7$ are parallel, then the value of K is:

(a) 4

(b) -4

(c) $\frac{1}{4}$

(d) $-\frac{1}{4}$

(xiii) The number of common tangents that are drawn to two circles which touches each other externally are:

(a) 3

(b) 4

(c) 5

(d) 2

(xiv) The cone and a cylinder has a same radius and same height. If the volume of cone is $240\pi\ cm^3$. Then the volume of cylinder is:

(a) $80\ \pi\ cm^3$

(b) $120\ \pi\ cm^3$

(c) $480\ \pi\ cm^3$

(d) $720\ \pi\ cm^3$

(xv) If the mode of the data 4, 5, 9, 6, 5, 7, 6, 2k +1 is 5 then the value of K is:

(a) 2

(b) 1

(c) 3

(d) 5

Test 3

LOYOLA SCHOOL, BHUBANESWAR

PRE – ICSE EXAMINATION – JANUARY

MATHEMATICS

Time: 2.30 hrs. **F.M: 80**

Answers must be written on the paper provided separately.
Writing is not allowed during the first 15 minutes. This time is designated for reading the question paper.
You will not be allowed to write on the paper provided separately.
Attempt all questions from Section A and any four questions from Section B.
All workings, including rough work, must be clearly shown on the same sheet as the rest of the answer.
The intended marks for questions or parts of questions are given in brackets.
Mathematical tables are provided.

Section – A

*(Attempt **all** questions from this section.)*

Question 1

Choose the correct answers to the questions from the given options.
Do not copy the question, write the correct answer only. [15]

i. Shikha purchases an article for Rs 61,600, which includes 10% GST. The amount of SGST is rupees:
   (a) 2800
   (b) 3580
   (c) 5600
   (d) 6160

ii. Which of the following equations has 2 as a root?
   (a) $x^2 - 4x + 5 = 0$
   (b) $x^2 + 3x - 12 = 0$
   (c) $2x^2 - 7x + 6 = 0$
   (d) $3x^2 - 6x - 2 = 0$

iii. If $(x-2)$ is a factor of $2x^3 - x^2 + px - 2$, the value of p is
   (a) -11
   (b) -5
   (c) -2
   (d) 5

iv. If x, 3, 12 and y are in continued proportion then :
   (a) x= 4/3 and y=48
   (b) x=4/3 and y=1/48
   (c) x=¾ and y =48
   (d) x=1 and y=1

v. The solution set representing the number line is:

(a) $\{x: x \epsilon R, -3 \leq x < 2\}$
(b) $\{x: x \epsilon R, -3 < x < 2\}$
(c) $\{x: x \epsilon R, -3 < x \leq 2\}$
(d) $\{x: x \epsilon R, -3 \leq x \leq 2\}$

vi. If a matrix P is of the order 1× 2 and matrix Q is of order 2× 1, then the matrix QP will contain:
(a) 1 element.
(b) 2 elements.
(c) 4 elements
(d) QP multiplication is not possible.

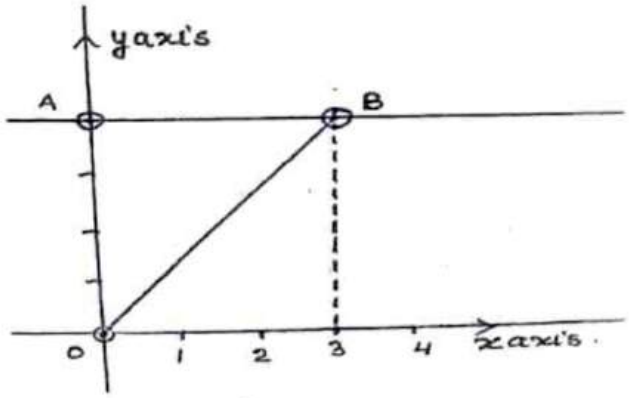
vii. If an=(5n+1) for an A.P. the nth e common difference is:
(a) 1
(b) 5
(c) 6
(d) 11

viii. Which of the following is invariant when reflected in the line y +2 = 0.
(a) (10,2)
(b) (-10,-2)
(c) (-2,-10)
(d) (-2, 0)

ix. The slope of the line x−1 =0 is:
(a) 1
(b) ½
(c) 0
(d) Not defined.

x. Kamal buys ***x*** number of shares at par of a certain company paying ***y%*** dividend. The rate of return will be:
(a) Equal to *y%*
(b) Lesser than *y%*
(c) Greater than *y%*
(d) Equal to *xy%*

xi. Given that the equation of the line AB is \(y - 4 = 0\). From the figure given below:



The centroid of the triangle AOB is:

(a) (1.5,0)
(b) (1.5,8/3)
(c) (1.5,1.5)
(d) (1,8/3)

xii. If the scale factor is 1:50000, and the distance between two cities on the map is 2 cm, then the actual distance between two cities is:

(a) 100000 km
(b) 2500 km
(c) 1000 km
(d) 1 km

xiii. If the curved surface area of a cylinder is 44 m^2 and the volume is 22 m^3. The height of the cylinder is: (Take π=22/7)

(a) 1 m
(b) 3.5 m
(c) 7 m
(d) 22 m

xiv. Three observations \(x, y, z\) are arranged in ascending order such that their mean is 1000, and the median is 800. In such a case, the value of \((x + z) \) is:

(a) 200
(b) 800
(c) 2200
(d) 3200

xv. Assertion (A): 7, (-14), 28, (-56), 112 are in G.P.
Reason (R): The terms of a G.P. cannot have both positive and negative numbers.

(a) A is true, R is true.
(b) A is false, R is true.
(c) A is false, R is false.
(d) A is true, R is false.

Test 4

NIRMALA CONVENT SCHOOL
PREBOARDS EXAMINATION

CLASS X **MATHEMATICS** **TIME- $2\frac{1}{2}$hrs.** **F.M.-80**

Attempt all questions from Section A and any four questions from Section B.
All working including rough work, must be clearly shown and must be done on the same sheet as the rest of the answer.
Omission of essential working will result in the loss of marks.
The intended marks for questions or parts of questions are given in brackets []
Mathematical tables are provided.

SECTION A

(Attempt all questions from this Section.)

Question 1

Choose the correct answers to the questions from the given options: **[15]**

(i) Taxes that are levied on any Intra-State purchase are?
a) IGST
b) CGST and SGST
c) SGST
d) CGST

(ii) If $A = \begin{bmatrix} 0 & 0 \\ 1 & 0 \end{bmatrix}$, then $A^2 =$
a) 0
b) A
c) I
d) 2A

(iii) If $\frac{1}{2}$ is a root of the equation $x^2 + kx - \frac{5}{4} = 0$ then the value of k is
a) -2
b) 2
c) 3
d) -3

(iv) If the equation $px^2 - 6x - 2 = 0$ has real roots then,
a) $p > -\frac{9}{2}$
b) $p \geq -\frac{9}{2}$
c) $p < -\frac{9}{2}$
d) $p \leq -\frac{9}{2}$

(v) The sum of n terms of AP is 3n-2, its 10^{th} term is
a) 28
b) 25
c) 3
d) None of the above

(vi) If 3, b, 75 are in continued proportion, then the value of b is
a) 39
b) 25
c) 225
d) 15

(vii) If $\Delta ABC \sim \Delta PQR$. If PQ = 6cm, AB = 8cm and perimeter of,then ΔABC is 36 cm, then perimeter of ΔPQR is
a) 20.25 cm
b) 27 cm
c) 48 cm
d) 64 cm

(viii) The volumes of two spheres are in the ratio 64:27. The ratio of their surface areas is
a) 3:4
b) 4:3
c) 9:16
d) 16:9

(ix) The probability of getting a bad egg in a lot of 400 is 0.035. the number of bad eggs in the lot is

a) 7
b) 14
c) 21
d) 28

(x) Consider a point which moves such that distances from two given points A and B are equal. Then, the locus of the point P is

a) A straight line which is the right bisector of AB
b) A circle with centre at A
c) A circle with centre at B
d) A straight line passing through either A or B

(xi) AB is a chord of the circle and AOC is its diameter such that angle ACB = 50°. If AT is the tangent to the circle at the point A, then BAT is equal to

a) 65°
b) 60°
c) 50°
d) 40°

(xii) From a point on a bridge across a river the angle of depression of the banks on opposite sides of the river are 30° and 45° respectively. If the bridge is at the height of 30 m from the banks, the width of the river is

a) $30(1+\sqrt{3})m$
b) $30(\sqrt{3}-1)m$
c) $30\sqrt{3}m$
d) $60\sqrt{3}m$

(xiii) Arun possesses 600 shares of ₹25 of a company. If the company announces a dividend of 8%, then Arun's annual income is

a) ₹ 48
b) ₹ 480
c) ₹ 600
d) ₹ 1200

(xiv) The equation of a line passing through the point (−2, 3) and having x-intercept 4 units is

a) $x + 2y = 8$
b) $x + 2y = 4$
c) $2x + y = 8$
d) $x + y + 4 = 0$

(xv) **Assertion(A):** If the number of runs scored by 11 players of a cricket team of India are 5, 19, 42, 11, 50, 30, 21, 0, 52,36, 27 then median is 30.

Reason(R): Median = (n+1)/2, if n is odd.

a) A is true, R is false
b) A is false, R is true
c) both A and R are true
d) both A and R are false

RBK School
(Managed by Babubhai Kanakia Foundation)
School Code: MA069

PRELIMINARY EXAM 2

Grade: 10 **Subject : Mathematics** **Max.Marks:80**

Date: **Dur. : 2 ½ Hours**

Number of printed pages : 6

SECTION - A (40 Marks)

(Attempt all questions from this section)

Question 1 **(15)**

Choose the correct answers to the questions from the given option:

i) A man deposited ₹ 600 per month for 9 months and received ₹ 5580 as the maturity value. The interest is ₹ _____.

(a) 270 (b) 450 (c) 180 (d) 540

ii) Assertion (A) :- A letter is chosen at random from the word ' MATHEMATICS', then the probability that it will be a vowel is 4/11.

Reason (R) :- The probability of an event P(E) is given by

$$P(E) = \frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$$

a) A is false, R is true (b) A is true , R is false (c) Both are true (d) Both are false

iii) If a polynomial $2x^3$-1 is divided by $(x + 3)$, then the remainder is _____.

(a) -4 (b) 38 (c) -55 (d) 2

iv) If $A = \begin{bmatrix} 3 & -6 \\ 9 & -12 \end{bmatrix}$, then $\frac{1}{3} A =$ _____.

(a) $\begin{bmatrix} 9 & -2 \\ 3 & 3 \end{bmatrix}$ (b) $\begin{bmatrix} 3 & -2 \\ 3 & 3 \end{bmatrix}$ (c) $\begin{bmatrix} 1 & -2 \\ 3 & -4 \end{bmatrix}$ (d) $\begin{bmatrix} 9 & -2 \\ -3 & 3 \end{bmatrix}$

v) For what value of x :- $x - 2$, $2x - 3$, and $x + 4$ will be in arithmetic proportion?

(a) 4 (b) -4 (c) 1 (d) -1

vi) The point A (p, q) is invariant about $x = p$ under reflection. The coordinates of its image A is :

(a) A $(p, -q)$ (b) A $(-p, q)$ (c) A (p, q) (d) A $(-p, -q)$

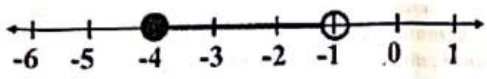
vii) The three vertices of the scalene triangle are always equidistant from a fixed point. The point is

a) Orthocentre b) Incentre c) Circumcentre d) Centroid

viii) The ratio of volume of a cone and a cylinder of equal radius and perpendicular height is

(a) 2:3 (b) 3:2 (c) 1:2 (d) 1:3

ix) The solution set for the graph of inequation given below is _____.



(a) {x: -4 < x ≤ -1, x ∈ R} (b) { -1, -2, -3, -4, x ∈ I}

(c) {x: -4 ≤ x < -1, x ∈ R} (d) {x: -4 < x < 1, x ∈ R}

x) Assertion (A) :- $p(x) = 4x^3 - x^2 + 5x^4 + 3x - 2$ is a polynomial of degree 3.

Reason (R) :- The highest power of x in the polynomial p(x) is the degree of the polynomial.

(a) A is false, R is true (b) A is true , R is false (c) Both are true (d) Both are false

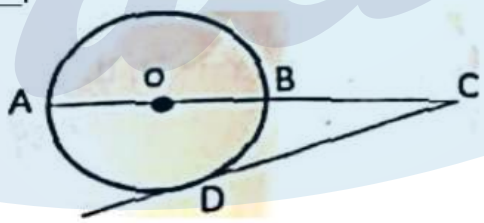
xi) Given $\begin{bmatrix} 8 & -2 \\ 1 & 4 \end{bmatrix} X = \begin{bmatrix} 12 \\ 10 \end{bmatrix}$. Order of matrix X is,

(a) (1x 2) (b) (2x 2) (c) (1x 1) (d) (2x 1)

xii) Point P (1,3) divides segment AB In the ratio 2:3 . Coordinates of A are (-1, 7).The coordinates of B area _____.

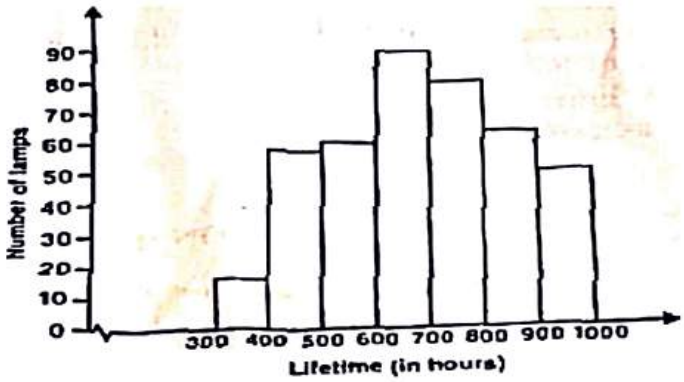
(a) (4, -3) (b) (4, 3) (c) (-4, 3) (d) (-4, -3)

xiii) O is the centre of the circle. If CD = 4, BC = 2, then the radius of the circle is_____.



(a) 2 (b) 6 (c) 3 (d) 4

xiv) The modal class of histogram given below is_____.



(a) 600 - 700 (b) 700 – 800 (c) 500 – 600 (d) 300 - 400

xv) The n^{th} term of an A.P. is $2n - 1$, then its first term and common difference is

(a) 2, 4 (b) 3, 6 (c) 1, 2 (d) 2, 1

Test 6

Grade: 10

Duration: 2 hr 30 mins
Max. Marks: 80

General Instructions: Answers to this paper must be written on the paper provided separately. You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this paper is the time allowed for writing the answers.

This paper consists of two sections: Section A and Section B. Attempt all the questions from **Section A** *and* ***any four*** *questions from* ***Section B.*** *The intended marks for questions or parts of questions are given in brackets.* ***This paper consists of 7 printed pages.***

Section A (40 Marks)

Question 1. Choose the correct option for each question. (15)

(i) Ramesh deposits ₹ 280 every month in a recurring deposit account at the rate of 9% p.a. and receives ₹ 441 as an interest at the time of maturity, what is the number of months for which he deposited the money ?

(a) 20 (b) 24 (c) 18 (d) 22

(ii) What is the annual income of 750, ₹20 shares, paying 8% dividend ?

(a) 12000 (b) 1200 (c) 1500 (d) 15000

(iii) If $x \in \{1, 2, 3, 4, 5, 6\}$, then what is the solution set of $3(x - 2) < 1$?

(a) {3, 4, 5, 6}
(b) $\{x : x < 2\frac{1}{3}, x \in R\}$
(c) {1, 2}
(d) $\{x : x > 2\frac{1}{3}, x \in R\}$

(iv) What is the remainder if the polynomial $2x^3 - 3x^2 + 7x - 8$ is divided by x -1?

(a) 0 (b) - 5 (c) – 2 (d) 5

(v) For what values of 'k' the equation $3x^2 - 2x + k = 0$ has real roots?

(a) $k \leq 3$ (b) $k > 3$ (c) $k \leq \frac{1}{3}$ (d) $k \geq \frac{1}{3}$

(vi) If the common difference of an AP is 7 then, what will be the value of $a_{24} - a_{19}$?

(a) 4 (b) 42 (c) 28 (d) 35

$a_{24} - a_{19} = 23d - 19d$

P.T.O.

(vii) Assertion : If $M \times \begin{bmatrix} 2 & 1 \\ 0 & 3 \end{bmatrix} = [4 \quad -7]$, then the order of matrix M is 2×1.

Reason : The product of two matrices A and B is possible if the number of columns in A is equal to the number of rows in B. Also the order of the product matrix AB is number of rows in A × number of columns in B.

(a) Both assertion and reason are correct and reason is the correct explanation of assertion.
(b) Both assertion and reason are correct but reason is not the correct explanation of assertion.
(c) Assertion is correct but reason is incorrect.
(d) Assertion is incorrect but reason is correct.

(viii) What will be the equation of line which is passing through (1, 3) and making an intercept of 5 on y- axis?

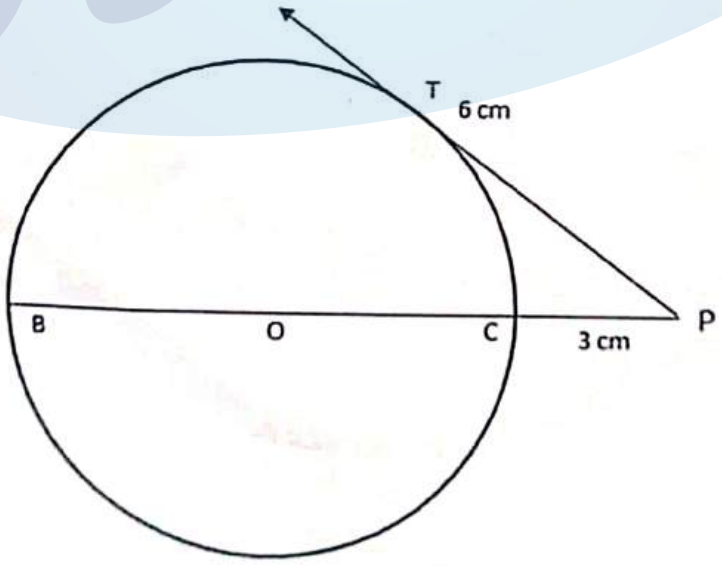
(a) $y + 2x - 5 = 0$
(b) $y - 2x + 5 = 0$
(c) $y + 2x + 5 = 0$
(d) $y - 2x - 5 = 0$

(ix) What will be the slope of a line perpendicular to the line, passing through the points (0, 6) and (7, 3) ?

(a) $\frac{7}{3}$ (b) $\frac{3}{7}$ (c) $-\frac{7}{3}$ (d) $-\frac{3}{7}$

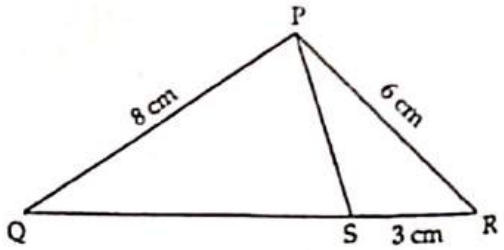
(x) In the given figure, what is the radius of the circle if O is the centre of the circle and PT is a tangent at T?

(a) 9 cm (b) 4.5 cm (c) 3 cm (d) 12 cm



(xi) In the given figure if $\Delta PQR \sim \Delta SPR$, then what will be the length of QR and PS?

(a) 12 cm, 4 cm (b) 4 cm, 16 cm (c) 12 cm, 16 cm (d) 8 cm, 16 cm



(xii) If a letter is chosen at random from the word 'INDIAN', then what will be the probability of getting N?

(a) $\frac{1}{6}$ (b) $\frac{2}{6}$ (c) $\frac{2}{5}$ (d) $\frac{1}{3}$

(xiii) What is the value of $(1 + \tan^2 A)(1 - \sin A)(1 + \sin A)$?

(a) 0 (b) 1 (c) -1 (d) 2

(xiv) What is the reflection of the point A(4, -1) when reflected in the line x = 2?

(a) (0, -1) (b) (8, -1) (c) (0, 1) (d) (-2, 3)

(xv) What is the total surface area of a cone, if its slant height is 21 cm and diameter of it's base is 24 cm?

(a) 252π (b) $260\ \pi$ (c) $250\ \pi$ (d) $396\ \pi$

Test 7

Std. X

CAMPION SCHOOL, MUMBAI
PRELIMINARY EXAMINATION
Sub : Mathematics Time : 2 ½ hours Marks : 80

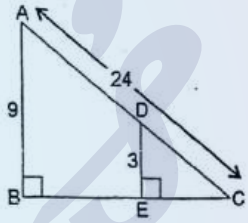
Answer to this paper must be written on the paper provided separately.
You will NOT be allowed to write during the first 10 minutes.
This time is to be spent in reading the question paper.
The time given at the head of this paper is the time allowed for writing the answer.
The intended marks for questions or parts of questions, are given in brackets [ ]

SECTION A [40 MARKS]
ALL QUESTIONS IN THIS SECTION ARE COMPULSORY

Question 1. [15]

(i)
(a) 1 (b) $\tan^2$ (c) (d) 4

(ii) In the figure, all dimensions are in cm. The length of AD is:



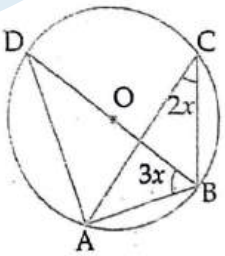
(a) 12 cm
(b) 14 cm
(c) 16 cm
(d) 18 cm

(iii) If on dividing $2x^3 + 6x^2 - (2k-7)x + 5$ by $x + 3$, the remainder is $k - 1$ then the value of k is
(a) 2 (b) -2 (c) -3 (d) 3

(iv) In an A. P., if $a = -5$, $l = 21$ and $S = 200$, then n is equal to
(a) 50 (b) 40 (c) 32 (d) 25

(v) The reflection of the point P (-2, 3) in the line $y = 1$ is
(a) (2, 3) (b) (-1, -2) (c) (-2, -1) (d) (2, -3)

(vi) If the adjoining figure, if O is the centre of the circle then the value of x is



(a) 18°
(b) 20°
(c) 24°
(d) 36°

(vii) A book has pages numbered from 1 to 85. What is the probability that the sum of the digits of the page number is 8, if a page is chosen at random?

(viii) If , then n : m is:
(a) 7 : 8 (b) 2 : 7 (c) 8 : 7 (d) 1 : 8

(ix) A dealer in Agra sold an LED to a customer in Agra for Rs 28,000. If SGST is Rs 2,520, then the rate of GST is:
(a) 12% (b) 18% (c) 9% (d) 28%

Contd..2

(x) Tangents PQ and PR are drawn from an external point P to a circle with centre O, such that ∠RPQ = 30°. A chord RS is drawn parallel to the tangent PQ. Then ∠RQS =

(a) 40° (b) 30° (c) 25° (d) 20°

(xi) In a flower bed, every third plant is a rose plant. If a child picks a flower, then the probability of the flower being other than rose is:

(xii) The equation of a line with y intercept as – 12 and parallel to the x-axis is

(a) $x = 12$ (b) $y = 12$ (c) $x = -12$ (d) $y = -12$

(xiii) If $(x + 1)(x - 1)(x + 3)$ are factors of a polynomial, then the polynomial is

(a) $x^3 + 3x^2 + x + 3$ (b) $x^3 - 3x^2 - x - 3$ (c) $x^3 + 3x^2 - x - 3$ (d) $x^3 + 3x^2 + x + 3$

(xiv) If the matrix A = then AI is

(a) (b) (c) (d)

(xv) The roots of the quadratic equation $9x^2 + 6x = 4$ are – 1.078 and 0.412. The roots correct to two significant figures are

(a) – 1.08 and 0.41 (b) – 1.07 and 0.42

(c) – 1.1 and 0.41 (d) – 1.0 and 0.4

Test 8

BEACON HIGH
Mathematics
Preliminary Examination

Grade: X

MM:80
Time: 2½ Hrs

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this paper is the time allowed for writing the answers.

All working, including rough work, must be clearly shown and must be done on the same sheet as the rest of the answer.
Omission of essential working will result in loss of marks.
The intended marks for the questions or parts of questions are given in the brackets [ ].

Section A (Attempt all questions)

Question 1

Choose the correct answers to the questions from the given options. (Do not copy the question, Write the correct answers only.) [15]

1. A box contains 150 apples. If one apple is taken out of random and the probability of its being rotten is 0.06, then the number of good apples in the box is :

   a. 90
   b. 121
   c. 60
   d. 141

2. The reflection of a point A(5,2) in the line $x-2=0$ is:
   a. (5 , -2)
   b. (- 5, 2)
   c. (-1,2)
   d. (1,-2)

3. If the height of a cone is doubled, then find its increased volume in percentage:
   a. 100 %
   b. 50%
   c. 25%
   d. 5%

4. The solution set for $5 - 3x \geq -2x + 2, x \in W$ is :
   a. { 0,1,2,3}
   b. {0,1,2}
   c. { 1, 2, 3,....}
   d. { -3,-2,-1,0,1,2,3}

5. The y-axis divides the line segment joining the points (-4,5) and (3, -7) in the ratio :
   a. 2:7
   b. 3:7
   c. 4:3
   d. 3:4

6. The common difference of the A.P whose nth term is $T_n = 3n - 4$, is
   a. -1
   b. 1
   c. 2
   d. -2

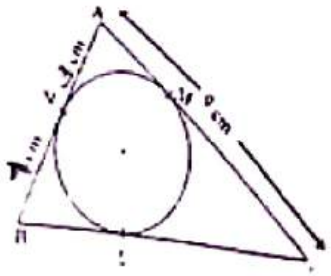
7. On dividing $x^2 - 4x + m$ by $(x - 2)$, the remainder is -1. The value of m is :
   a. 1
   b. 2
   c. -2
   d. 3

8. If the height of the vertical pole is $\sqrt{3}$ times the length of its shadow on the ground, then the angle of elevation of the sun at that time is:
   a. 30°
   b. 60°
   c. 45°
   d. 75°

9. The value of $\sqrt{\frac{1+\sin\theta}{1-\sin\theta}}$ is
   a. $\cot\theta - \operatorname{cosec}\theta$
   b. $\operatorname{cosec}\theta + \cot\theta$
   c. $\operatorname{cosec}^2\theta + \cot^2\theta$
   d. $\sec\theta + \tan\theta$

10. If the cost of an article is ₹25,000and CGST paid by the owner is ₹2250, the rate of GST is:
   a. 9%
   b. 10%
   c. 15%
   d. 18%

11. In the adjoining figure, Δ ABC is circumscribing a circle. Then, the length of BC is
   a. 7 cm

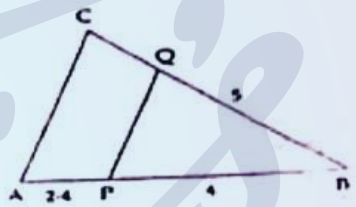


b. 8 cm
c. 9 cm
d. 10 cm

12. If $x\begin{bmatrix}2\\3\end{bmatrix}+y\begin{bmatrix}-1\\0\end{bmatrix}=\begin{bmatrix}10\\6\end{bmatrix}$ then the values of x and y are

a. $x=2, y=6$
b. $x=2, y=-6$
c. $x=3, y=-4$
d. $x=3, y=-6$

13. In the given figure, PQ || CA and all lengths are given in centimetres. The length of BC is



a. 6.4 cm
b. 7.5 cm
c. 8 cm
d. 9 cm

14. Which one of the following is not a quadratic equation
a. $(x+2)^2=2(x+3)$
b. $x^2+3x=(-1)(1-3x)^2$
c. $(x+2)(x-1)=x^2-2x-3$
d. $x^3-x^2+2x+1=(x+1)^3$

15. Find the Median class of the following grouped data.

Marks	0-10	10-20	20-30	30-40	40-50
Frequency	9	10	24	16	11

a. 0- 10
b. 10 -20
c. 20 - 30
d. 30 - 40

Test 9

MOUNT CARMEL SCHOOL
PRE BOARD EXAMINATION
CLASS X
MATHEMATICS

Time : 2½ Hours **M.M : 80**

SECTION A (40 MARKS)
(Attempt all questions from this Section)

Question 1

Choose the correct answers to the questions from the given options: [15]

(i) If the pair of lines $2x - ay + 3 = 0$ and $4x - 7y + 1 = 0$ are perpendicular, then the value of a is

(a) 7/8 (b) $-8/7$

(c) 1/8 (d) 4/7

(ii) The nth term of an A.P. is given by $(-4n + 15)$). The sum of first 20 terms of this A.P. is

(a) 560 (b) 540

(c) – 540 (d) – 560

(iii) If $(x + 1)$ is a factor of $x^3 + 2x^2 + kx - 10$, then the value of k is

(a) 8 (b) 7

(c) – 2 (d) – 9

(iv) If P is the solution set of $8x - 1 < 5x + 5$ and Q is the solution set of $7x - 1 < 20$, where $x \in N$, then $P \cap Q$

(a) 1 (b) 2

(c) 3 (d) 4

(v) A letter is choosen from the word 'TRIANGLE'. The probability of its being a vowel is

(a) 3/8 (b) 1/2

(c) 5/8 (d) 3/4

(vi) If Mr Kapil deposits Rs 1800 per month for 18 months in a cumulative deposit account, then total money deposited by him is

(a) Rs 40,000 (b) Rs 36,000

(c) Rs 32,400 (d) Rs 28,600

(vii) The areas of two similar triangles are 25 cm^2 and 36 cm^2. If one side of the first triangle is 3 cm long, then the length of the corresponding side of the second triangle is

(a) $5\frac{3}{5}$cm (b) $3\frac{3}{5}$cm

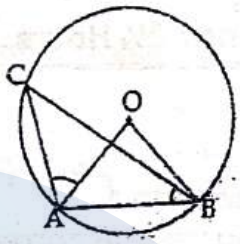
(c) 26 cm (d) 3/2cm

(viii) If radii of two concentric circles are 4 cm and 5 cm, then the length of each chord of one circle which is tangent to the other is

(a) 3 cm (b) 6 cm

(c) 1 cm (d) 9 cm

(ix) In the adjoining figure, O is the centre of the circle. If $\angle AOB = 90°$ and $\angle ABC = 30°$, then $\angle CAO$ is equal to:



(a) 30° (b) 45°

(c) 90° (d) 60°

(x) The volume of a cone of height 20 cm and base diameter 12 cm is

(a) 240π cm³ (b) 480π cm³

(c) 720π cm³ (d) 960π cm³

(xi) Two poles are 25 m and 15 m high and the line joining their tops makes an angle of 45° with the horizontal. The distance between these poles is

(a) 5 m (b) 10 m

(c) 15 m (d) 12 m

(xii) The third proportional to 9 and 12 is

(a) $6\sqrt{3}$ (b) 10.5

(c) 16 (d) None of these

(xiii) The reflection of the point P(1, – 2) in the line y = –1 is

(a) (– 3, – 2) (b) (1, – 4)

(c) (1, 4) (d) (1, 0)

(xiv) The roots of the quadratic equation $x^2 - 55x + 750 = 0$ are

(a) 30 and 25 (b) – 30 and – 25

(c) 70 and 15 (d) 25 and – 30

(xv) If $A = \begin{bmatrix} 1 & x \\ 4 & -1 \end{bmatrix}$ and $A^2 = I$, then the value of x is

(a) $-1/2$ (b) 0

(c) $1/8$ (d) $1/4$

Test 10

INTER NOBILIAN PRE ICSE EXAMINATION

Mathematics

Class 10

Full Marks: 80 Duration: 2½ hrs.

Attempt *all* questions from Section A and *any four* questions from Section B.

Section A: [40 Marks]

Attempt all questions from this section

Question 1 **[15]**

i) The percentage share of SGST of total GST for an Intra-state sale of an article is

a) 25% b) 50% c) 75% d) 100%

ii) The solution set of the inequation $x - 3 \geq -5, x \in R$ is

a) $\{x : x > -2, x \in R\}$ b) $\{x : x \leq -2, x \in R\}$

c) $\{x : x \geq -2, x \in R\}$ d) $\{-2, -1, 0, 1, 2\}$

iii) If $x^2 + kx + 6 = (x-2)(x-3)$ for all values of x, then the value of k is

a) -5 b) -3 c) -2 d) 5

iv) If x, y, z are in continued proportion then $(y^2 + z^2) : (x^2 + y^2)$ is equal to

a) z : x b) x : z c) z x d) (y + z) : (x + y)

v) The mean and mode is given by 9 and 8 respectively. Then, the median is

a) $\frac{23}{3}$ b) $\frac{26}{3}$ c) 8 d) 9

vi) The probability of the sun rising from the East is P(S). The value of P(S) is

a) P(S) = 0 b) P(S) < 0 c) P(S) = 1 d) P(S) > 1

vii) $(\text{Sec}^2 A - 1)(1 - \text{Cosec}^2 A)$ is equal to

a) 1 b) 0 c) 2 d) -1

viii) The total surface Area of a cone whose radius is $\frac{r}{2}$ and slant height $2l$ is

a) $2\pi r(l + r)$ b) $\pi r(l + \frac{r}{4})$ c) $\pi r(l + r)$ d) $2\pi r l$

ix) If (x-3), (2x + 1) and (4x + 3) are three consecutive terms of an AP, find the value of x.

a) 3 b) 4 c) 2 d) 1

x) If matrix A is of order 3 x 2 and matrix B is of order 2 x 2 then the matrix AB is of order

a) 3 x 2 b) 3 x 1 c) 2 x 3 d) 1 x 1

xi) If the line $2x + 3y = 5$ and $Kx - 6y = 7$ are parallel, then the value of K is

a) 4 b) -4 c) $\frac{1}{4}$ d) $-\frac{1}{4}$

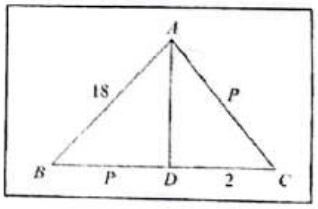
xii) In the following figure, if $\Delta ADB \sim \Delta ADC$ then the value of p is

a) 12 cm

b) 6 cm

c) 3 cm

d) 4 cm



xiii) **Assertion (A)** : The value of n, if a=10, d=5, $a_n = 95$ is 16.

Reason (R) : The formula of general term a_n is $a_n = a + (n - 1)d$.

a) Both (A) and (R) are true and (R) is the correct explanation of (A).

b) Both (A) and (R) are true but (R) is not the correct explanation of (A).

c) (A) is true but (R) is false.

d) (A) is false but (R) is true.

xiv) The value of Sin $53^0\,34^1$ is

a) .8146 b) .8043 c) .8046 d) .7146

xv) If the length of the shadow of a tower is $\sqrt{3}$ times that of its height then the angle of elevation of the sun is

a) 15^0 b) 30^0 c) 45^0 d) 60^0

St. Xavier English School and Junior College, Chalbasa

2nd Pre-Board Examination,

STD- X

Maximum Marks: 80
Time allowed. Two and half hours
Answers to this Paper must be written on the paper provided separately.
You will not be allowed to write during first 15 minutes.
This time is to be spent in reading the question paper.
The time given at the head of this Paper is the time allowed for writing the answers.

Attempt all questions from Section A and any four questions from Section B.
All working, including rough work, must be clearly shown, and must be done on the same sheet as the rest of the answer.
Omission of essential working will result in loss of marks.
The intended marks for questions or parts of questions are given in brackets []
Mathematical tables are provided.

SECTION A

(Attempt all questions from this Section.)

Question 1 16

Choose the correct answers to the questions from the given options:

(i) Mr. Pankaj took health insurance policy for his family and paid ₹1000 as SGST. Find the to... annual premium paid by him for the policy, rate of GST being 20%.

(a) ₹ 10000
(b) ₹ 11000
(c) ₹ 12000
(d) ₹ 13000

(ii) When the roots of a quadratic equation are real and unequal then the discriminate of the quadratic equations:

(a) Infinite
(b) Positive
(c) Zero
(d) Negative

(iii) If (x - 1) is a factor of $2x^2 - 7x + 2a$, then the value of 'a' is:

(a) -5/2
(b) 5/2
(c) 3/2
(d) -3/2

(iv) Given $\begin{bmatrix} 2 & 1 \\ -3 & 4 \end{bmatrix} . X = \begin{bmatrix} 7 \\ 6 \end{bmatrix}$, find the order of the matrix X.

(a) 2x2
(b) 1 x2
(c) 2 x1
(d) 1 x1

(v) Find the 12th term from the end in AP 13,18,23,....., 153,158.

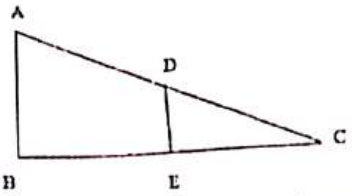
(a) 98
(b) 103
(c) 108
(d) -5

(vi) Find the reflection of the point P(-1,3) in the line $x=2$

(a) (2, -7)
(b) (-5, -3)
(c) (5, 3)
(d) (-2, 7)

(vii) In the given diagram $\Delta ABC \sim \Delta DEC$ and AB = 9cm, DE = 3cm, AC = 24cm, calculate AD

(a) 6cm
(b) 8cm
(c) 12cm
(d) 16 cm



(viii) A dice is thrown once. Find the probability of getting a number between 2 and 6.

(a) 1
(b) $\frac{1}{3}$
(c) $\frac{1}{2}$
(d) $\frac{2}{3}$

(ix) The inner radius of a pipe is 2.1cm. How much water can 12m of this pipe hold?

(a) 4657.71 cm^3
(b) 16632cm^3
(c) 3080cm^3
(d) 12800cm^3

(x) *Find the largest value of x for $2(x-1) \leq 9-x$ and $x \in W$.*

(a) 1
(b) 2
(c) 3
(d) 4

(xi) Find the value of x, given that $A^2 = B$, $A \equiv \begin{bmatrix} 2 & 12 \\ 0 & 1 \end{bmatrix}$ *and* $B = \begin{bmatrix} 4 & x \\ 0 & 1 \end{bmatrix}$ $A = \begin{bmatrix} 2 & 12 \\ 0 & 1 \end{bmatrix}; B = \begin{bmatrix} 4 & x \\ 0 & 1 \end{bmatrix}$

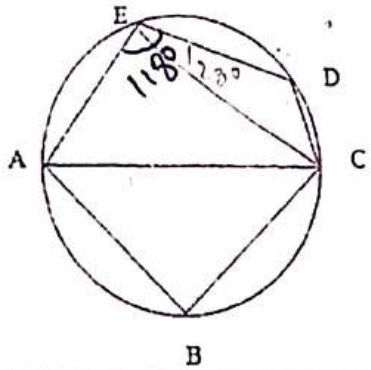
(a) 6
(b) 18
(c) 32
(d) 36

(xii) The centroid of a ΔABC is G(4,3). If the co ordinates of the vertices A,B and C are (1,3), (4,b) and (a,1). Find a and b.

(a) a =5, b =7
(b) a =7, b =5
(c) a = -5, b = -7
(d) a = -7, b = 5

(xiii) In the adjoining figure, AC is a diameter of the circle. AB = BC and $\angle 118^0$, calculate $\angle DEC$

(a) 62^0
(b) 18^0
(c) 28^0
(d) 68^0



(xiv) If the P^{th} term of an AP is $(2p + 3)$, find the AP

(a) 3,5,7,9,.....

(b) 7,9,11,13 .....

(c) 5,7,9,11,.....

(d) 1,3,4,5,.....

(xv) The mode of a grouped frequency distribution is found=d graphically by drawing:

(a) a linear graph

(b) a histogram

(c) a frequency polygon

(d) a cumulative frequency curve

Test 12

St. Xavier's Collegiate School, Kolkata
Rehearsal Examination

Class: 10, Mathematics

Time: 2½ Hrs
Full Marks: 80

Section A

(Attempt all questions from this section)

Question 1 [15 x 1]

In each of the following, choose the most appropriate answer:

i) The point X(p, q) is invariant under reflection in

(a) x = p (b) y = q (c) both x = p and y = q (d) the origin

ii) The solution set of the inequation $-5 \leq 2x + 1 < 9$; $x \in W$ is

(a) {−3, −2, −1, 0, 1, 2, 3, 4} (b) {0, 1, 2, 3, 4} (c) {0, 1, 2, 3} (d) {1, 2, 3, 4}

iii) In a quadratic equation $ax^2 + bx + c = 0$, if $4ac \leq b^2$ then the roots are

(a) equal (b) real and equal (c) real and unequal (d) real

iv) If the order of the matrix A is 5 X 3 and that of matrix B is 2 X 5, then the order of matrix AB is

(a) 2 X 3 (b) 3 X 2 (c) 5 X 5 (d) AB does not exist

v) The next two terms of the AP $\sqrt{5}, \sqrt{20}, \sqrt{45}$ are

(a) 15 and $15\sqrt{3}$ (b) $\sqrt{22}$ and $\sqrt{180}$ (c) $\sqrt{80}$ and $\sqrt{125}$ (d) $\sqrt{75}$ and $\sqrt{108}$

vi) A solid sphere and a solid hemisphere have the same total surface area. The ratio of their diameters is

(a) $\sqrt{2} : 3$ (b) 3 : 4 (c) $\sqrt{3} : 2$ (d) 4 : 3

vii) If in Δ ABC and Δ DEF, $\frac{AB}{DE} = \frac{BC}{DF}$, the triangles will be similar if

(a) ∠A = ∠F (b) ∠B = ∠D (c) ∠B = ∠E (d) ∠A = ∠D

viii) A rectangular piece of paper 22 cm X 7 cm is rolled along its longer side and again along its shorter side to form two cylinders. The ratio of their curved surface areas is

(a) 7 : 22 (b) 22 : 7 (c) 49 : 484 (d) 1 : 1

ix) Mohit and Arjun were both born in the year 2005. The probability that they were born on different days of the week is

(a) $\frac{6}{7}$ (b) $\frac{1}{7}$ (c) $\frac{364}{365}$ (d) $\frac{1}{365}$

x) The line 3x + 4y = 24 meets the x-axis at point A and the y-axis at point B. The area of Δ AOB equals

(a) 48 sq units (b) 24 sq units (c) 12 sq units (d) 12 cm^2

xi) A trader purchased an article marked at Rs 8000 at some discount and sold it at the marked price. If he deposited Rs 86.40 as GST @ 12% to the Government, the rate of discount he received is

(a) 9 % (b) 10 % (c) 11 % (d) 12 %

xii) The meeting point of the altitudes of a triangle is called the

(a) circumcentre (b) incentre (c) centroid (d) orthocentre

xii) The roots of the quadratic equation $ax^2 + x + b = 0$ are equal if

(a) $b^2 = 4a$ (b) $a^2 = 4b$ (c) $b = \frac{4}{a}$ (d) $b = \frac{1}{4a}$

xiv) 1. Shares of company A paying 12%, Rs 100 shares at Rs 72

2. Shares of company B paying 13%, Rs 100 shares at Rs 80

3. Shares of company C paying 15%, Rs 100 shares at Rs 90

Which company gives the best return?

(a) Company A (b) Company B (c) Company C (d) Company A and C

xv) **Assertion (A):** If the ratio of the areas of two spheres are 27 : 125, then their radii are in the ratio 3 : 5.

Reason (R): If the ratio of the areas of two spheres are $V_1 : V_2$, then their radii are in the ratio $(V_1)^{1/3} : (V_2)^{1/3}$.

Identify the correct choice.

(a) A is true, R is true (b) A is true, R is false (c) A is false, R is true (d) A is false, R is false

Test 13

SRI SRI RAVISHANKAR VIDYA MANDIR, MULUND
SECOND PRELIMINARY EXAMINATION (2023-24)
SUBJECT: MATHEMATICS

STD: X
DATE:

MARKS: 80
TIME: $2\frac{1}{2}$ *hour*

Answers to each question must be written on a separate sheet of paper. You will not be allowed to write during the first 15 minutes.
This time is to be spent reading the question paper.
The time given at the head of the paper is the time allotted for writing the answers.
Attempt all the questions from ***Section A*** *and any four questions from* ***Section B.***
All working including rough work must be clearly shown and must be done on the same sheet as the rest of the answers.
Omission of essential working will result in loss of marks.
The intended marks for questions or parts of questions are given in brackets [ ].
Mathematical tables are provided.

THIS QUESTION PAPER CONSISTS OF 7 PRINTED PAGES.

SECTION A

(Attempt ***all*** *questions from this Section.)*

Question 1

Choose the correct answers to the questions from the given options. [15]

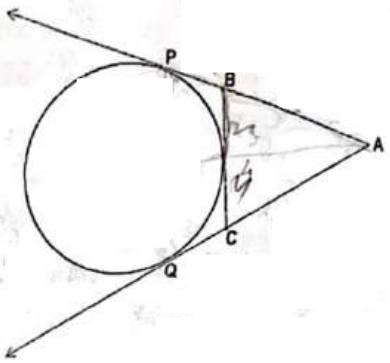
(Do not copy the question, write the correct answers only.)

(i) The roots of $3x^2 - 5x + 6 = 0$ are:
(a) Real and unequal
(b) Real and equal
(c) Imaginary
(d) Real and imaginary

(ii) Which of the following points is invariant with respect to the line $y = -2$:
(a) $(-1, 2)$
(b) $(-1, -2)$
(c) $(1, 2)$
(d) $(-2, 2)$

(iii) A dealer sells a laptop for ₹ 114000 to a customer, if the GST rate is 18%, then CGST is:
(a) ₹ 10300
(b) ₹ 10260
(c) ₹ 21400
(d) ₹ 20520

(iv) In the figure shown below, AP, AQ and BC are tangents to the circle. If AB=5 cm, AC 6 cm and BC= 4 cm, then the length of AP is:



(a) 2.5 cm
(b) 6.5 cm
(c) 3.5 cm
(d) 7.5 cm

(v) Parnab Babu invests ₹ 26,680 in buying ₹ 50 shares at a discount of 8%, the number of shares he buys is:
(a) 460
(b) 280
(c) 580
(d) 1344

(vi) If $8x + 13y : 8x - 13y = 9 : 7$, then $x : y$ is:
(a) 8: 1
(b) 13: 2
(c) 1: 8
(d) 13: 1

(vii) A bag contains 15 red marbles and some blue marbles. If the probability of drawing a blue marble is 1/4, then the number of marbles in the bag is:
(a) 20
(b) 25
(c) 35
(d) 30

(viii) Find the ratio in which the line segment joining the points $(-4,6)$ and $(8,-3)$ *is divided by* $y - axis$:
(a) 1: 2
(b) 1: 3
(c) 2: 1
(d) 3: 1

(ix) The sum of $-5 + (-8) + (-11) + \cdots\ldots + (-230)$ is:
(a) -8030
(b) 8030
(c) 8930
(d) -8930

(x) The lower quartile of $7,12,15,6,8,4$ *and* 10 is:
(a) 8
(b) 6
(c) 4
(d) 7

(xi) $\frac{1+\cos\theta-\sin^2\theta}{\sin\theta+\sin\theta.\cos\theta}$ is equal to:

(a) $\cot\theta$

(b) $\operatorname{cosec}\theta$

(c) $\sec\theta$

(d) $\tan\theta$

(xii) The ratio between the curved surface area and the total surface area of a right circular cylinder is 1:2. The ratio between the height and the radius of the cylinder is:

(a) 1:2

(b) 1:4

(c) 4:3

(d) 1:1

(xiii) If $A=\begin{bmatrix}0 & -1\\ 1 & 2\end{bmatrix}$ and $B=\begin{bmatrix}1 & 2\\ -1 & 1\end{bmatrix}$, *find matrix X, if* $X-3B=2A$.

(a) $X=\begin{bmatrix}1 & 5\\ -4 & -5\end{bmatrix}$

(b) $X=\begin{bmatrix}3 & 6\\ -3 & 6\end{bmatrix}$

(c) $X=\begin{bmatrix}3 & 4\\ -1 & 7\end{bmatrix}$

(d) $X=\begin{bmatrix}-4 & 4\\ 1 & 7\end{bmatrix}$

(xiv) A transformation is a way to map a function or a shape onto itself. The type of enlargement or reduction is called size transformation. Which of the following is/are NOT true in a size transformation:

i) The image of a triangle is a triangle.

ii) The model of a plane figure and the actual figure are similar to one another.

iii) The model of a solid and the actual solid are similar to one another.

iv) The area *of the actual figure* $= k \times$ *the area of the model*, where k is the scale factor.

(a) Only (i)

(b) (i) and (iii)

(c) (i) and (iv)

(d) Only (iv)

(xv) Assertion (A): $x<y \Rightarrow ax>ay$ *and* $\left(\frac{x}{a}\right)>\left(\frac{y}{a}\right)$, *where 'a' is a negative number.*

Reason (R): If each of an inequation is multiplied or divided by the same negative number the sign of inequality is reversed.

(a) A is true and R is false.

(b) A is false and R is true.

(c) Both A and R are true.

(d) Both A and R are false.

Test 14

STD:X 16/01/24	KAPOL VIDYANIDHI INTERNATIONAL SCHOOL (ICSE) TEMPLE OF KNOWLEDGE PRELIMINARY EXAMINATION MATHEMATICS B	DUR: $2\frac{1}{2}$ hrs. Marks: 80

Answer to this paper must be written on the paper provided separately.
You will not be allowed to write during first 15minutes.This time is to be spent in reading the question paper. The time given at the head of this paper is the time allowed for writing the answers.

Attempt all questions from section A and any four questions from section B.

All working, including rough work, must be clearly shown and must be done on the same sheet as the rest of the answer. Omission of essential working will result in the loss of marks The intended marks of questions or parts of questions are given in brackets [ ].

SECTION-A [40 Marks]

Attempt all questions from this section.

Question 1: [15]

Choose the correct answers to the questions from the given options:
(Do not copy the question, write the correct answers only.)

i) Amount of dividend on 1200 shares of ₹50 each of at the rate of 12% is :
(a) ₹6001
(b) ₹6000
(c) ₹6050
(d) ₹7200

ii) Vimla had a recurring deposit account in ICICI bank and deposited ₹1000 per month for $2\frac{1}{2}$ years. If the rate of interest was 10% p.a., then the matured value of this account is:
(a) ₹32,775
(b) ₹33,875
(c) ₹23,775
(d) ₹34,975

iii) If, $-2 \leq \frac{1}{2} - \frac{2x}{3}$, *and* $x \in R$ then the largest value of x is
a) $\frac{15}{4}$
b) 4
c) 3
d) None of these

iv) If one root of a quadratic equation $6x^2 - x - k = 0$ is 2/3 , then the value of k is:

(a) 2
(b) 1/9
(c) 8/3
(d) 1

v) The value of x for which $2x$, $(x + 10)$ and $(3x + 2)$ are the three consecutive terms of an AP, is

(a) 6
(b) -6
(c) 18
(d) -18

vi) If $\begin{bmatrix} 1 & 2 \\ 2 & 9 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 2 \\ 9 \end{bmatrix}$, then the value of x and y are

a) $x = 10, y = 0$
b) $x = 5, y = 4$
c) $x = 0, y = 1$
d) $x = 4, y = 5$

vii) If $x^2 + 4y^2 = 4xy$, then $x : y$ is:

(a) 1 : 4
(b) 4 : 1
(c) 2 : 1
(d) 1 : 2

viii) The mid-point of the line-segment AB is P(0, 4), if the coordinates of B are (- 2, 3) then the co-ordinates of A are

(a) (2, 5)
(b) (- 2, - 5)
(c) (2, 9)
(d) (- 2, 11)

ix) Which of the following is the equation of a line with x-intercept -3 and passing through the point (-2, 5) .

(a) $5x + y - 15 = 0$
(b) $x - 5y + 15 = 0$
(c) $x + 5y - 15 = 0$
(d) $5x - y + 15 = 0$

The base radii of a cone and a cylinder are equal. If their curved surface areas are also equal, then the ratio of the slant height of the cone to the height of the cylinder is

(a) 2 : 1
(b) 1 : 2
(c) 1 : 3
(d) 3 : 1

xi) The three vertices of a scalene triangle are always equidistant from a fixed point. The point is:

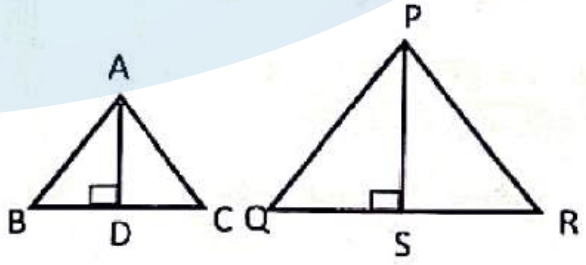
(a) Orthocentre of the triangle.
(b) Incentre of the triangle.
(c) Circumcentre of the triangle.
(d) Centroid of the triangle.

xii) The numbers 10, 12, 14, 16, 17 and x are in ascending order. If the mean and median of these observations are same, the value of x is:

(a) 16
(b) 14
(c) 21
(d) 17

xiii) In the given diagram, $\Delta ABC \sim \Delta PQR$ and $AD : PS = 3 : 8$. The value of AB : PQ is:

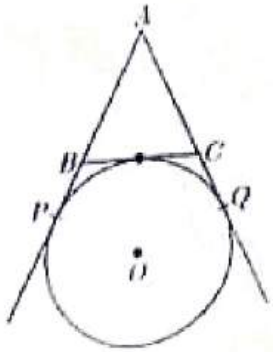
(a) 8 : 3
(b) 3 : 5
(c) 3 : 8
(d) 5 : 8



xiv) In an A.P. 8, 13, 18, ... the n^{th} term is 83, then n is equal to

a) 14
b) 16
c) 13
d) 15

xv) In figure, AP, AQ and BC are tangents of the circle with centre O. If AB = 5 cm, AC = 6 cm and BC = 4 cm, then the length of AP (in cm) is (a) 15
(b) 10
(c) 9
(d) 7.5



Test 15

VILE PARLE MAHILA SANGH'S
ORION SCHOOL (CISCE)
PRELIMINARY EXAMINATION - 2

Grade: X | Subject – Mathematics | MM: 80

Time Duration: 2 Hrs. 30 Min

Answers to this Paper must be written on the paper provided separately.
You will not be allowed to write during the first 15 minutes.
This time is to be spent in reading the question paper.
The time given at the head of this Paper is the time allowed for writing the answers.

Attempt all questions from Section A and any four questions from Section B.
All working, including rough work, must be clearly shown and must be done on the same sheet as the rest of the answer.
Omission of essential working will result in loss of marks.
The intended marks for questions or parts of questions are given in brackets [ ].
Mathematical tables are provided.

SECTION A (40 Marks)

Attempt all questions from this Section.

Question 1 [15]

Choose the correct answers to the questions from the given options.

(Do not copy the question, write the correct answers only)

(i) What is the sum of all the 11 terms of an A.P. whose middle term is 30?

(a) 330
(b) 300
(c) 30
(d) 11

(ii) If $x + 2$ is a factor of $2x^3 - x^2 + kx + 10$ then the value of k is:

(a) 5
(b) 10
(c) 13
(d) -5

(iii) Mr. Sharma buys 60 shares of nominal values of ₹100 and decides to sell when they are at premium of 60%. The sale proceeds is:

(a) ₹9000

(b) ₹6000

(c) ₹3600

(d) ₹9600

(iv) What constant will add in $x^2 - 4x + 2 = 0$ to make the roots of the equation real and equal?

(a) 4

(b) 2

(c) -2

(d) 3

(v) What can be said regarding if a line has zero slope:

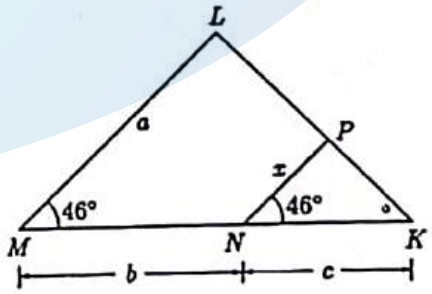
(a) θ is obtuse angle

(b) Y-axis

(c) Either the line is X-axis or it is parallel to the X-axis

(d) Either the line is Y-axis or it is parallel to the Y-axis

(vi) In the given figure, x is



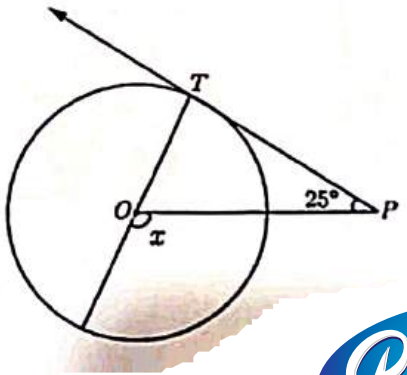
(a) $\frac{ab}{a+b}$

(b) $\frac{ac}{b+c}$

(c) $\frac{bc}{b+c}$

(d) $\frac{ac}{a+c}$

(vii) In the given figure PT is a tangent at T to the circle with centre O. if $\angle TPO = 25°$ then the value of x is:



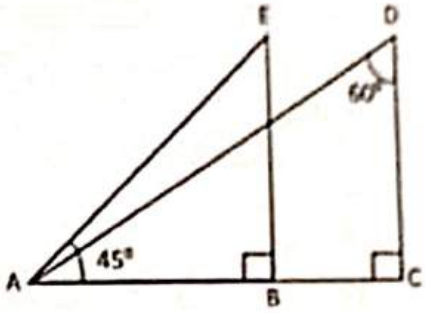
(a) 25°

(b) 65°

(c) 115°

(d) 90°

(viii) What are the angles of depression from the observing positions D and E of the object at A?



(a) $30^0, 45^0$

(b) $60^0, 45^0$

(c) $45^0, 30^0$

(d) $30^0, 30^0$

(ix) In a recurring deposit account, how often is the fixed amount deposited?

(a) Quarterly

(b) Monthly

(c) Annually

(d) Biannually

(x) If $0 < -\frac{x}{5} < 1$, then the range of x is:

(a) $0 < x < 5$

(b) $-5 < x < 0$

(c) $0 < x < -5$

(d) $0 > x > 5$

(xi) The base radii of a cone and a cylinder are equal. If their curved surface areas are also equal, then the ratio of the slant height of the cone to the height of the cylinder is:

(a) 2:1

(b) 1:2

(c) 1:3

(d) 3:1

(xii) The point of intersection of medians of a triangle is called _____.

(a) Centroid

(b) Incentre

(c) Orthocentre

(d) Circumcentre

(xiii) In scalene ΔABC, if CP is angle bisector of angle C then, point P is:

(a) equidistant from AC and BC

(b) equidistant from point C

(c) equidistant from point A

(d) equidistant from AP and CB

(xiv) If $\tan A + \cot A = 2$, the value of $\tan^2 A + \cot^2 A = ?$

(a) 4

(b) 1

(c) 3

(d) 2

(xv) **Assertion (A):** Histograms are used to represent the distribution of a continuous dataset.

Reason (R): Histograms are circular charts that are divided into classes by radial lines.

(a) Both A and R are true

(b) Both A and R are false

(c) A is true, R is false

(d) A is false, R is true

Test 16

Universal High School
Ashok Van, Shiv Vallabh Road, Dahisar East, Mumbai - 400 068
Ph: +91 22 2857 7555, 60 600 0544 1 / 2
Email: info.dahisar@universal.edu.in Web: dahisar.universalhigh.edu.in

SECOND PRELIMS EXAMINATION
MATHEMATICS
TWO HOURS THIRTY MINUTES
CLASS X

MARKS: 80

Answers to this paper must be written on the paper provided separately.
You will not be allowed to write during the first 15 minutes.
This time is to be spent in reading the question paper.
The time given at the head of this paper is the time allowed for writing the answers.

Attempt **all** questions from **section A** and any **FOUR** questions from **section B**.
All working, including rough work must be clearly shown and must be done on the same sheet as the rest of the answer.
Omission of essential working will result in loss of marks.
The intended marks for questions or parts of questions are given in brackets [ ].
Mathematical tables are provided.

Section A (40 marks)

(Attempt all questions from this section)

Question 1

Choose the correct answers to the questions from the given options: **[15]**

(i) If $\frac{5a}{8b} = \frac{3c}{4d}$ then by invertendo:

a) $\frac{5a+8b}{8b} = \frac{3c+4d}{4d}$ b) $\frac{5a-8b}{8b} = \frac{3c-4d}{4d}$ c) $\frac{5a}{3c} = \frac{8b}{4d}$ d) $\frac{8b}{5a} = \frac{4d}{3c}$

(ii) The value of 'm' for which the quadratic equation $3x^2 - 5x - 2m = 0$ has distinct roots is:

a) $m < \frac{-24}{25}$ b) $m > \frac{-25}{24}$ c) $m < \frac{24}{25}$ d) $m > \frac{24}{25}$

(iii) The reflection of a point $(4, -1)$ in line $x = 2$ is:

a) $(8, -1)$ b) $(3, -2)$ c) $(0, -1)$ d) $(2, -1)$

(iv) On dividing the expression $6x^3 + 5x^2 + x - 2$ by $(x + 1)$ the remainder is:

a) 0 b) -4 c) 8 d) -1

This paper consists of 8 printed pages.

Turn Over

(v) The volume of a right circular cone with same base radius and height as that of a right circular cylinder is 120 cm^3. The volume of the cylinder is:

a) 60 cm^3 b) 480 cm^3 c) 240 cm^3 d) 360 cm^3

(vi) From the sample space = {1, 4, 9, 16, 25, 29} if 29 is removed then the probability of getting neither prime nor composite number is:

a) $\frac{2}{5}$ b) $\frac{1}{5}$ c) $\frac{3}{5}$ d) $\frac{4}{5}$

(vii) A cuboidal tank has capacity = 30 m^3. A small model of tank is made having capacity = 240 cm^3. The scale factor used is:

a) 1 : 8 b) 1 : 50 c) 1 : 125000 d) 1 : 2

(viii) If the nth term of an arithmetic progression is (n + 3) then the first three terms of the A.P are:

a) 1, 2, 3 b) 2, 4, 6 c) 4, 5, 6 d) 7, 8, 9

(ix) For the given inequation $-1 \leq 3 + 4x < 23$, $x \in Z$, the minimum value of x is:

a) -1 b) 0 c) 1 d) 5

(x) If the lines $3x - 4y + 7 = 0$ and $2x + ky + 5 = 0$ are perpendicular to each other, the value of k is:

a) $\frac{2}{3}$ b) $\frac{-3}{2}$ c) $\frac{3}{2}$ d) $\frac{-2}{3}$

(xi) Rohit invests ₹ 9600 in 8 % ₹ 100 shares at ₹ 120. He sells the shares when the price of each share rises by ₹ 40. He invests the proceeds in 10 % ₹ 50 shares quoted at ₹ 40. The sale proceed is :

a) ₹ 15360 b) ₹12800 c) ₹ 3200 d) ₹ 3840

(xii) If the order of matrix A is 3 × 2 and that of matrix B is 2 × 3 then:

a) A + B is possible.
b) B – A is possible.
c) AB is possible.
d) Neither AB nor BA is possible.

(xiii) $\frac{tan^2\theta}{1+tan^2\theta}$ is equal to:

a) $2\,sin^2\theta$ b) $2\,cos^2\theta$ c) $sin^2\theta$ d) $cos^2\theta$

(xiv) Assertion (A): If two circles touch each other, then the point of contact lies on the straight line joining their centres.

Reason (R): Radius through point of contact is perpendicular to the common tangent at that point.

a) Both A and R is false.
b) Both A and R is true.
c) A is true but R is false.
d) A is false but R is true.

(xv) Assertion (A): Classes of a frequency distribution are 1 – 10, 11 – 20, 21 – 30, 1, ..., 51 – 60. Then class size of each interval is 10.

Reason (R): Class size = Upper limit – lower limit.

a) Both A and R is true.
b) Both A and R is false.
c) A is true but R is false.
d) A is false but R is true.

Answers

Test 1

i a ii b iii a iv c v d vi c vii c viii b ix d x c

xi d xii d xiii a xiv b xv a

Test 2

i c ii b iii b iv a v c vi c vii d viii a ix b x d

xi a xii b xiii a xiv d xv a

Test 3

i a ii c iii b iv c v a vi c vii b viii b ix d x a

xi d xii d xiii c xiv c xv d

Test 4

i b ii a iii b iv b v c vi d vii b viii d ix b x a

xi c xii b xiii d xiv b xv b

Test 5

i c ii c iii c iv c v a vi - vii c viii - ix c x a

xi d xii a xiii c xiv a xv c

Test 6

i a ii b iii c iv c v c vi d vii d viii a ix a x b

xi a xii d xiii b xiv a xv d

Answers

Test 7

i - ii c iii d iv d v c vi a vii - viii - ix b x b

xi - xii d xiii c xiv - xv c

Test 8

i d ii c iii a iv a v c vi - vii d viii b ix d x d

xi d xii b xiii c xiv c xv c

Test 9

i b ii c iii d iv a v a vi c vii b viii b ix d x a

xi b xii c xiii d xiv a xv b

Test 10

i b ii c iii a iv a v b vi c vii d viii b ix c x a

xi b xii b xiii d xiv c xv b

Test 11

i a ii b iii b iv c v b vi c vii d viii c ix b x c

xi d xii b xiii c xiv c xv b

Test 12

i c ii c iii d iv d v c vi c vii b viii d ix a x b

xi b xii d xiii d xiv d xv d

Answers

Test 13

i c ii b iii b iv d v c vi d vii a viii a ix d x b

xi a xii d xiii c xiv d xv c

Test 14

i d ii b iii a iv a v a vi c vii c viii a ix d x a

xi c xii c xiii c xiv b xv d

Test 15

i a ii d iii d iv b v c vi b vii c viii a ix b x b

xi a xii a xiii a xiv d xv c

Test 16

i d ii b iii c iv b v d vi b vii c viii c ix a x c

xi b xii c xiii c xiv b xv a

Pati's

ICSE Academy

Prepare for ICSE CLASS 10
Free Resources

SCAN QR CODE Now

History/Civics

Geography

Maths

Physics

Chemistry

Biology

Hindi

Physical Education

Computer Applications

Pati's

ICSE Academy

Prepare for ICSE CLASS 10
Free Resources

SCAN QR CODE Now

Economics

Commercial Studies

French

Robotics & AI

Home Science

EVS

Marathi

Gujarati

Odiya

Pati's ICSE ACADEMY

Scan QR code for Free Access to
500+ Prelim Papers across 20 subjects