A.P.R.E.I. SOCIETY (R) HYDERABAD

S.S.C. IMPORTANT QUESTIONS

MATHEMATICS

PAPER – 2

(PLANE GEOMETRY)

One mark questions

1. When the two polygons are similar.
2. Write properties of similar triangles.
3. Define Apalonius theorem.
4. In ΔABC, DE||BC, D and E are point on AB, AC. If D is mid point of AB find $\frac{AE}{EC}$.
5. A ladder 25m long reaches a window of a building 24m above the ground. Determine the distance of the foot of the ladder from the building.
6. The perpendicular AD on the base BC of a ΔABC intersects at D so that DB = 3CD prove that $2AB^2 = 2AC^2 + BC^2$.
7. A man goes 150m due east and then 200m due north. How far is the from the starting place.
8. In an equilateral triangle with side 'a' prove that the altitude is of length $\frac{\sqrt{3}}{2}a$.
9. ABCD is a Rhombus prove that $AB^2 + BC^2 + CD^2 + DA^2 = AC^2 + BD^2$.
10. If three common tangents are drawn to the circles radii 5cm and 7cm what is distance between their centres.

Two marks questions

1. There is a circle of radius 3 from a point P which is at a distance of 5cm from the centre of the circle a tangent is down to the circle the length of the tangent.
2. Two circles are of radii 3cm and 1cm the distance between their centres is 5cm. The length of their transverse common tangent is _____.
3. ΔABC is an obtuse triangle obtuse angled B If AD perpendicular CB prove that $AC^2 = AB^2 + BC^2 + 2BC\ BD$ prove that the line joining the mid points of two sides of the triangle is parallel to the third side.
4. A vertical stick 12cm long casts a shadow 8cm long on the ground at the same time a tower casts the shadow 40cm long on the ground. Determine the height of the tower.
5. Two poles of heights 6m and 11m on a plane ground if the distance between their feet is 12cm determine the distance between their tops.
6. If PAB is a secant to a circle intersecting the circle at A and B and PT is a tangent segment then $PA.\ PB = PT^2$.
7. In an equilateral triangle with side a prove that the area of the triangle is $\frac{\sqrt{3}}{4}a^2$

8. The lengths of the two tangents drawn from an external point to a circle are equal .

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

10. In two concentric circles prove that a chord of large circle which is tangent to smaller circle is bisecting at the point of contact.

11. A circle touches all the four sides of a quadrilateral ABCD prove that AB + CD = BC + DA.

12. ABC is a triangle is which AB = AC and D is any point in BC prove that $AB^2 - AD^2 = BD.CD$

Four marks questions

1. Basic proportionality theorem (Thales theorem)

2. Pythogerean theorem.

3. Alternate segment theorem.

Five marks questions

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1. Construct a triangle ABC in which BC = 4cm $\angle A = 50^0$ and altitude through A = 3cm.

2. Construct a triangle ABC in which BC = 5cm $\angle A = 70^0$ and median AD through A = 3.5cm.

3. Construct a triangle ABC in which BC = 75cm $\angle A = 70^0$ and foot of the perpendicular D on BC from A is 4.5cm away from B.

4. Construct a cyclic quadrilateral ABCD where AB=3cm, BC = 6cm, AC = 4cm and AD =2cm.

(ANALYTICAL GEOMETRY)

One mark questions

1. One end of the diameter of a circle is (3, 2) and the centre is (0, 0). Find the coordinates of the other end of the diameter.

2. A(3, -7), B(-1, 4) are coordinates of a square ABCD find the area of a square.

3. Find the intercepts of 3x + y + 4 = 0.

4. Find the slope of $\frac{x}{a}+\frac{y}{b}=1$.

5. Find the slope of the line is parallel to 3x – 2y + 1 = 0.

6. Find the slope of the line is perpendicular to 5x – 2y + 4 = 0.

7. Find slope of the line making an angle 150^0 with the positive direction of x-axis.

8. Find area of triangle formed by the points (3, 0)(0, 4) and (0, 0).

9. Find the equation of the line passing through the point (-2, 3) which makes equal intercepts with coordinate axes.

10. Find the equation of the line passing through the point (3, -5) and whose slope is $\frac{1}{3}$.

Two marks questions

1. Find the point on x-axis that is equidistant from (2, 3) and (4, -2).
2. Find the point on Y-axis which is equidistance from P(3, 5) and origin.
3. Find the ratio in which the point R(4, 24) on the line PQ divides the join of P(7, 27) and Q(10, 15).
4. In what ratio is the segment joining the points (4, 6) and (-7, -1) divided by the x-axis.
5. IN what ratio is the segment joining the points (-3, 2) and (6, 1) divided by Y-axis.
6. If the three points A(P, 2) B(-3, 4) and C(7, -1) are collinear find the value of P.
7. If the area of the triangle formed with the vertices (t, 2t) (-2, 6) (3, 1) is 5 sq.units find 't'?
8. The vertices of a quadrilateral are (2, 3) (4, 5) (4, 9) and (2, 7) show that the diagonals dissect each other.
9. Find the area of the triangle formed by the line $2x - 4y - 7 = 0$ with the coordinate axes.
10. Find the equation of the line making an angle 150^0 with the positive direction of x-axis and making y intercept – 1.
11. Find the equation of the line passing through the point (3, 4) and is parallel to $4x + 7y = 8$.

Four marks questions

1. Find the coordinates of the points of trisection of a segment joining A(-3, 2) and (9, 5).
2. If A(-1, 2), B(4, 1) C(7, 16) are the three vertices of the parallelogram ABCD find the coordinates of the fourth vertex D and find its area.
3. Find the equation of a line passing through (4, 3) and making intercepts on the coordinate axes whose sum is equal to '-1'.
4. Find the equation of a line whose slope is $\frac{4}{5}$ and which bisects the line joining the points P(1, 2) and Q(4, -3).
5. Find the equation of the line which passes through the point (1, -6) and whose product of the intercepts on the coordinate axes is one.
6. Find the equation of the line that cuts off intercept a and b on the X and Y-axes such that $a + b = 2$ and $ab = -3$.
7. Find the equation of the line perpendicular to the line joining (3, -5) (5, 7) and passing through (2, -3).

(COMPUTING)

One mark questions

1. List the essential components of a computer ?
2. What is the algorithm.
3. What is the flow chart.
4. What is the use of loop.
5. Define programming language.
6. On which base the capacity of computer decide ?
7. Expand C.P U.

8. Write any four languages of computer.
9. Who was father of computer.
10. What are the another name of modern computers.
11. Under which control all the parts of the computer work.
12. What devices are used in fourth generation computers.

Two marks questions

1. Explain the structure of a computer by means of a block diagram.
2. What are the different boxes used in a flow chart describe their functions in detail.
3. Explain the importance of an algorithm and flow chart in solving a problem on computer.
4. What are the functions of computer.
5. What is meant by step wise retirement.

MATHEMATICS-II

Four marks questions

1. Gopal purchases a radio set for 500Rs and sold it for 600Rs. Execute the flow chart using this data to determine loss gain.
2. Draw a flow chart to calculate the sum of the first 'n' natural numbers not using the formula $S_n = \frac{n(n+1)}{2}$.

(STATISTICS)

One mark questions

1. The average at 9, 11, 13, p, 18, 19, s, p find p.
2. The average of (a + b) and (a – b).
3. Find the median of 1.8, 4.0, 2.7, 4.5, 2.3, 3.7, 3.1.
4. Find the average of first 'n' natural numbers.
5. The median of $\frac{x}{5}$, x, $\frac{x}{4}$, $\frac{x}{2}$ and $\frac{x}{3}$ is 9. Find x.
6. The mean of data is 9. If each observation is multiplied by 3 and then 1 is added to each result find the mean of the new observations so obtained.
7. Find the range of first 'n' natural numbers.
8. Write the empirical relationship among AM, median and Mode.

Two marks questions

1. The AM of 11 observation is 17.5. If an observation 15 is deleted. Find the mean of the remaining observations.
2. Write the merits of A.m.
3. The mean of 10 observation is 16.3 By an error one observation is registered as 32 instead of 23. Find the correct mean.
4. Write the formula for median and expand the terms.
5. The mean of 20 observation is 12.5. By an error it is registered as -15 instead of 15. Find correct mean.

Four mark questions

1. Find the mean for the given data in short cut method.

C. I	0 – 19	20 – 39	40 – 59	60 – 79	80 – 99	100 – 119
F	9	16	24	15	4	2

2. Find the mean for the frequency distribution given below:

Marks	1-10	11-20	21-30	31-40	41-50
F	3	12	16	14	5

3. Find the mode for the frequency distribution

C . I	30-39	40-49	50-59	60-69	70-79	80-89	90-99
F	2	3	20	31	17	10	4

4. The mean of the following frequency table is 50 but the frequencies f_1 and f_2 in closes 20-40 and 60-80 are missing. Find the missing frequencies.

Class	0-20	20-40	40-60	60-80	80-100	Total
Frequency	17	F1	32	F2	19	120

(MATRICES)

One mark questions

1. $A=\begin{bmatrix}2 & 4\\ -6 & 5\end{bmatrix}$, $B=\begin{bmatrix}4 & -3\\ 5 & 7\end{bmatrix}$ then find 3A + 2B.

2. If $A=\begin{bmatrix}1 & 3\\ 2 & -1\end{bmatrix}$ then find A^2.

3. $A=\begin{bmatrix}1 & 3\\ 5 & 6\end{bmatrix}$ then find $A + A^T$.

4. Find the value of 'a' if $\begin{bmatrix}2a & 5\\ 6 & 3\end{bmatrix}$ has no multiplicative inverse.

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5. If $\begin{bmatrix}3 & 4\\ 2 & 5\end{bmatrix}=\begin{bmatrix}a & b\\ c & d\end{bmatrix}\begin{bmatrix}1 & 0\\ 0 & 1\end{bmatrix}$ then find a, b, c, d.

6. If $\begin{vmatrix}d-2 & 5\\ -4 & 2\end{vmatrix}=0$ then find d.

7. If $\begin{bmatrix}1 & 3\\ 0 & -1\end{bmatrix}\begin{bmatrix}2\\ 1\end{bmatrix}=\begin{bmatrix}p\\ -1\end{bmatrix}$ then find p.

8. If $\begin{bmatrix}3 & 0\\ 0 & \lambda\end{bmatrix}$ is a scalar matrix find x.

9. If $A=\begin{bmatrix}1 & 0\\ 0 & 1\end{bmatrix}$ then find A^5.

Two marks questions

1. If $\begin{bmatrix}3x+2y & 6\\ 2 & 2x-3y\end{bmatrix}=\begin{bmatrix}5 & 6\\ 2 & -\end{bmatrix}$ find x and y.

2. If $\begin{bmatrix}x & y\end{bmatrix}\begin{bmatrix}2 & 3\\ 0 & 1\end{bmatrix}=\begin{bmatrix}6 & 10\end{bmatrix}$ then find x and y.

3. If $A=\begin{bmatrix}1 & 2\\ 1 & 3\end{bmatrix}$ then $A + A^{-1} = 4I$.

4. If $M=\begin{bmatrix}1 & 2\\ 0 & 5\end{bmatrix}=\begin{bmatrix}2 & 3\end{bmatrix}$ then find the matrix M and its order.

5. $X + 2I = \begin{bmatrix}3 & -1\\ 1 & 2\end{bmatrix}$ then find 'X'.

6. If $D^{-1} = \begin{bmatrix} 3 & 4 \\ 1 & 2 \end{bmatrix}$ find the matrix D.

Four marks questions

1. If $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix} B = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$, show that $(AB)^{-1} = B^{-1}A^{-1}$.

2. If $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ then show that $A^2 - (a + d)A = (bc - ad)I$.

3. $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix} B = \begin{bmatrix} a & 1 \\ b & -1 \end{bmatrix}$ If $(A + B)^2 = A^2 + B^2$ find the values of a and b.

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4. Solve the following equation M matrix inverse method. $x = \frac{7 - 3y}{2}$, $y = 13 - 6x$

5. Solve the following equation by crammer method $2x - 3y + 4 = 0$, $6x + y + 8 = 0$.

6. $A = \begin{bmatrix} 1 & 4 \\ 0 & -1 \end{bmatrix} B = \begin{bmatrix} 2 & m \\ 0 & -\frac{1}{2} \end{bmatrix}$ If AB = BA find the value of m.

Note:- The students are advised to do some more problems on crammer method and matrix inverse method.

(TRIGONOMETRY)

One mark questions

1. Define Radian.
2. Find the value of $\sin45^0 \cos30^0 + \cos45^0 \sin30^0$.
3. If $\sin\theta = \frac{5}{13}$ find $\cos\theta$.
4. Find $\tan\theta$ in terms of secθ.
5. Change 270^0 in circular system.
6. Find the length of the are which makes an angle 45^0 at centre, whose radius is 14cm.
7. x = 2sinθ, y = 2cosθ, eliminate 'θ'.
8. x = cosecθ + cotθ, y = cosecθ – cotθ eliminate 'θ'.

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9. Find the value of $\cos0^0 + \sin90^0 + \sqrt{2}\ \sin45^0$.
10. Show that $\frac{1-\tan^2 30^0}{1+\tan^2 30^0} = \cos 60^0$.
11. Find the value $\sin^2 19^0 + \cos^2 19^0$.

Two marks questions

1. If $A = 30^0$, then show that sin2A = 2sinAcosA.
2. $\sin(A-B) = \frac{1}{2},\ \cos(A+B) = \frac{1}{2}$, find A and B.
3. Show that $\sqrt{\frac{1-\cos\theta}{1+\cos\theta}} = \cos ec\theta - \cot\theta$
4. Find the value of $32\cot^2\frac{\pi}{4} - 8\sec^2\frac{\pi}{3} + 8\cot^2\frac{\pi}{6}$.
5. If 5sinA = 3 then find the value of $\sec^2 A - \tan^2 A$.
6. The angel of eleration of a point 100 mts from the foot of the tree is 60^0 find the height of the tree.
7. If $\cos\theta = \frac{\sqrt{3}}{2}$, find $4\sin^2\theta + \tan^2\theta$.
8. Show that $\tan^2\theta + \tan^4\theta = \sec^4\theta - \sec^2\theta$.
9. Show that $\cot\theta + \tan\theta = \sec\theta \cos ec\theta\ \ (0 < \theta < 90^0)$
10. Show that $1 - \sin^6\theta + \cos^6\theta = 3\sin^2\theta\cos^2\theta$.

Four marks questions

1. If $\sin\theta = \frac{15}{17}$ then find $\frac{15\cot\theta + 17\sin\theta}{8\tan\theta + 16\sec\theta}$

2. Show that $\frac{\tan\theta+\sec\theta-1}{\tan\theta-\sec\theta+1}=\frac{1+\sin\theta}{\cos\theta}$

3. If $\sec\theta+\tan\theta=p$ then show that $\frac{p^2-1}{p^2+1}=\sin\theta$.

4. If $\sec\theta+y\sin\theta,\ b=x\sin\theta-y\cos\theta$, eliminate 'θ'

5. Show that $\tan^2\alpha-\tan^2\beta=\frac{\cos^2\beta-\cos^2\alpha}{\cos^2\alpha\cos^2\beta}$.

6. Solve $\frac{\cos^2\theta}{\cot\theta-\cos^2\theta}=3$.

Five marks questions

A.P.B.I.E.S.
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1. There are two temples one on each bank of a river, just opposite to each other. One of the temple A is 40mts high. As observed from the top of the temple A, the angles of depression of the top and foot of the other temple B are $12^0 30^1$ and $21^0 48^1$ respectively. Find the width of the river and height of the temple B.

2. A glider is Hying at an altitude of 5000 mts. The angle of depression of the control tower of the airport from the Glider is 18^0. What is horizontal distance between the Glider and the control tower.

3. An aeroplane at an altitude of 2500 mts observes the angles of depression of opposite points on two banks of a river to be $41^0 20^1$ and $52^0 10^1$. Find the width of the river in meters.

4. The upper part of a tree broken by wind in two partws, makes an angle 30^0 with the ground. The top of the tree touces the ground at a distance 20 mts from the foot of the tree. Find the height of the tree before it was broken.

5. From the Ground and first floor of a building the angles of elevation of the top of the spire of the church were found 60^0 and 45^0 respectively the first floor is 5mts high. Find the height of the spire.

(CHAPTER WISE BITS)

GEOMETRY

1. What is the length of the diagonal of a square cohose area is 16 sq. cm $\left(4\sqrt{2}cm\right)$

2. The ratio of the perimeters of two similar triangles is 2.3. What is ratio of the corresponding areas. (4.9)

3. If $AC^2 > AB^2 + BC^2$ then ΔABC is _____ angel triangle (obtuse)

4. The sides of an equilateral triangle is 'a' then the altitude is _____ $\left(\frac{\sqrt{3}}{2}a\right)$

5. In ΔABC , AD is angular bisector of $\angle A,\ BD = 6cm,\ DC = 8cm$ then AB: AC = _____.
(3:4)

6. $\Delta ABC \sim \Delta PQR,\ \angle A = 50^0, \angle B = 60^0$ then $\angle Q =$ _____ (70^0)

7. The ratio of the sides of squares of triangle and the medians = _____ (4:3)

8. Number of direct common tangents of two externally touching circles (2)

9. The radii of two intersecting circles are r_1, r_2 and the distance of two centre is d. then
$(d > r_1 + r_2)$

10. The length of the tangent from the external point to the circle whose radises 4 is 8cm. Then what is the distance from the external point to the centre of the circle is $(\sqrt{80}cm)$

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11. The radii of two circles r_1, r_2 and the distance between two centres is 'd' then the length of transverse common tangent. $(\sqrt{d^2 - (r_1 + r_2)^2}$

12. The tangents of the end points of the diameter of a circle _____ (parallel)

13. The Scientist who was given proof for the pythagaran theorem (bhaskara charya)

14. In $\Delta ABC,\ \angle A = 90^0$ AD median on BC, BC = 12cm then AD = _____ (6cm)

15. The ratio of the sides of a triangle is $1 : \sqrt{3} : 2$ then the ratio of opposite angles = (1:2:3)

16. If a parallelogram is cyclic it is _____ (Rectangels)

17. Two circles whose radii one 6cm, 4cm are internally touching. Then distance between the control is _____ (2cm)

18. In $\Delta ABC,\ AB = 6cm,\ BC = 10cm,\ CA = 8cm$ AD is median on BC, then AD = _____.
(2cm)

19. In quadrilateral ABCD BD diagonal bisected $\angle B$ and $\angle D$ then $\frac{AB}{BC} =$ (AD/DC)

20. In trapezium ABCD, the diagonal AC, BD are intersecting at E. Then AE: EC = _____ (BE:DE).

COORDINATE GEOMETRY

1. y = mx + c intersect the y-axis at _____ (0, c)

2. The slope of the straight line which maties 30^0 with positive direction of x-axis is _____.
$(\tan 30^0 - \frac{1}{\sqrt{3}})$

3. The slope of the straight line perpendicular to the line 2x – 3y + 1 = 0 (-3/2)

4. A_1, x + b, y + c = 0, $a_2x + b_2y + c_2 = 0$ are coincide then the condition is _____ $\left(\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}\right)$

5. The end points of the diagonal of a circle is (9, 3), (1, -1) then the centre _____ (5, 1)

6. If a < 0 then the point (-2a, 3) lies _____ quadrant (Q_1)

7. The mid point of the line segment $\frac{x}{a} + \frac{y}{b} = 1$ $\left(\frac{a}{2}, \frac{b}{2}\right)$

8. The equation of the straight line passing through the point (2, 3) which makes equal intercepts with coordinate axes is _____ (x + y = 5)

9. The X-axis devide the straight line joining two points (4, -3), (5, 2) in the ratio of _____ (3:2)

10. The centroid of the triangle of the triangle whose virtices one (2, -3), (5, 2), (3, 6) is _____ $\left(\frac{10}{3}, \frac{5}{3}\right)$

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11. The area of the triangle whose vertices are (0, 0), (4, 0), (0, 3) _____ (6 sq.units)

12. The point slope form at a straight line is _____ ($y - y_1 = m(x - x_1)$\

13. The distance from the origin to the point $(4\sin\theta,\ 4\cos\theta)$ _____ (4 units)

14. The centroid devides the each median in the ratio of = _____ (2:1)

15. The point of intersection of x-axis and the straight line 2x + 3y – 5 = 0 (5/2, 0)

16. The mid point of (3, 6), (8, 9) is _____ $\left(\frac{11}{2}, \frac{11}{2}\right)$

17. The perimeter of a triangle of vertices (0, 0), (4, 0), (0, 3) _____ (12 units)

18. The area of the triangle with straight line ax + by + c = 0 and the coordinate axes _____. $\left(\frac{c^2}{2ab}\right)$

19. The point of intersection of y = 5 and y –axis _____ (0.5)

20. The slope of $\frac{x}{3} + \frac{y}{4} = 1$ is _____. (-4/3)

21. The centroid of a triangle eis (1, 4), two vertices are (4, -3), (-9, 7). What is the third vertex of the triangle (8, 8)

22. The closed figure of the points (0, 0), (2, 0), (2, 2), (0, 2) is _____ (square)

23. The coordinates of the point which devides line segment (x_1, y_1), (x_2, y_2)in a given ratio externally is $\left(\frac{mx_2 - nx_1}{m-n}, \frac{my_2 - ny_1}{m-n}\right)$

24. The intersecting point of the straight lines x = 3, y = 2 is _____. (3, 2)

25. The figure joining the mid points of a quadrilateral is _____ (parallelogram)

STATISTICS

1. A.M of first n natural numbers _____. $\left(\frac{n+1}{2}\right)$
2. The AM of 1, 2 x and 3 is 'O' then x = _____ (-6)
3. The median of 0.1, 2, -4, 3, 0.004, -7, 8 _____ (0.1)
4. The formula for median in a grouped data (classified data) _____ $l+\left(\frac{\frac{N}{2}-F}{f}\right)C$
5. The average which does not effect an extreme values _____ (median)
6. Mode of the values 45, 35, 4, 35, 4, 6, 7 _____ (4)
7. Am = 24, median = 31, mode = _____ (45)
8. The mean observation is 7 and the mean of 15 observations is 12 then what is the mean of total observations (10)
9. Formula for mode in grouped data or classified data is _____ $2f - (f_1 + f_2)$.
10. The range of first n natural number _____ (n – 1)
11. Use the mid values of the classes for finding _____ (mean)
12. The average which is used in commercial data _____ (mode)
13. The mode of 4, 8, 9, p, 7, 6, 4, 9 is 9 then the value of p = (9)

APPEALS MATHEMATICS-II

TRIGONOMETRY

1. 1^0 = _____ Radian (0.01746^c)
2. 1^c = _____ degrees ($57^0\ 16^1$)
3. $\sin\theta\sec\theta\cot\theta$ = _____ (1)
4. $\cos 0^0 + \sin 90^0 + \sqrt{2}\sin 45^0$ = _____ (3)
5. $\tan(A-B)=\frac{1}{\sqrt{3}}$, $\sin A=\frac{1}{\sqrt{2}}$ then B = _____Radians $\left(\frac{\pi}{12}\right)$
6. If $\sin\theta-\cos\theta=0$ then θ = (45^0)
7. If $\cos ec\theta-\cot\theta=\frac{1}{2}$ then $\cos ec\theta+\cot\theta$ = _____ (2)
8. $5\sin\theta=3$ then $5\cos\theta$ = _____ (4)
9. The range of sinθ = _____. (-1, +1)
10. $\text{Sin}0^0\ \text{sin}1^0\ \text{sin}2^0$ …….. $\text{sin}90^0$ = _____. (0)
11. $\text{Sin}^2 1^0 + \text{sin}^2 89$ = _____. (1)

12. $\sec(270+\theta) =$ _____. (cosecθ)

13. Cosec $300^0 =$ _____. $\left(\frac{-2}{\sqrt{3}}\right)$

14. If $\sin 70^0 = \cos\theta$ then θ = _____ (20^0)

15. Tan(A – B) = _____. $\frac{\tan A - \tan B}{1+\tan A \tan B}$

16. If $\sin\theta = \frac{1}{2}$ then $\cot\theta$ = _____. $\left(\sqrt{3}\right)$

17. $\sin^2 30^0 \sin^2 45^0 \sin^2 60^0$ are in _____ progression (A.P)

18. If $\sec\theta = \cos ec\theta$ then $\cot\theta$ = _____. (1)

19. A minute hand of a table clock is 3cms long. How for its tip move in 20 minutes.

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$\frac{44}{7} cm$

20. $\cos ec\theta(1-\cos\theta)(\cos ec\theta+\cot\theta) =$ _____. (1)

21. $\sin 31^0 \cos 59 + \cos 31^0 \sin 59^0 =$ _____. (1)

22. $\tan\frac{\pi}{4} + \cot\frac{\pi}{4} =$ _____. (2)

23. The angles an same terminal line are called _____ (coterminal angles)

MATRICES

1. 3 x 3 identity matrix is _____. $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

2. $\begin{bmatrix} 3 & 0 \\ 0 & 3 \end{bmatrix}$ is _____ matrix (scalar)

3. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ then a + b + c + d = (2)

4. $\begin{bmatrix} 2a & 5 \\ 6 & 3 \end{bmatrix}$ is a singular matrix then (5)

5. $(A^T)^T =$ _____. (A)

6. $A = \begin{bmatrix} 5 & 2 \end{bmatrix}$ $B = \begin{bmatrix} x \\ y \end{bmatrix}$ then AB = _____ [5x + 2y]

7. $A = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$ then AA^{-1} = _____. $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

8. The scientist who invented matrixes _____ (J.J. Silvestor)

9. If $A^T = -A$ then A is _____ matrix (Anti symmetric)

10. $A = \begin{bmatrix} \sec\theta & \tan\theta \\ \tan\theta & \sec\theta \end{bmatrix}$ then detA = (1)

11. $A_{2\,x3}$, B_{3x3} then order AB is _____ (2 x 3)

12. $A = \begin{bmatrix} 2 & 3 \\ -3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ then A – B = _____ $\begin{bmatrix} 1 & 1 \\ -6 & 0 \end{bmatrix}$

13. Determinant of a unit matrix = _____. (1)

A.P.R.E.I.S

14. $x + 3y = 4$, $5x + 6y = 8$ while solving the equations in crammar method $B_2 = \begin{bmatrix} 2 & 4 \\ 5 & 8 \end{bmatrix}$

15. $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ then I^{-1} = _____. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

16. $(ABC)^T$ = _____. $C^TB^TA^T$

COMPUTING

1. _____ are used in 4th generation computer (large scale integrated circuits)
2. Expand A.L.U. (Arithematic logical unit)
3. All parts of the computers are controlled by _____ (C.U)
4. _____ used reduces the execution of the set of (instruction)
5. The language that express the algorithm in a language understandable by a computer is known as (Programming language)
6. A ***** is an _____ device (input)
7. The input, output, CPU together constitutes the _____ (hard ware)
8. The box used find taking in flow charts (Rhombus)
9. The high level language in computer (Basic, cobol, fortran, pascal)
10. Pictorial representation of the sequence of steps (flow chart)
11. Expansion of RAM (random access memory)
12. Expansion of I.C (Integrated circuits)
13. The unit base the information in the computer (memory)
14. The presently used computers are (new man)
15. Expansion of 'ROM' (Read only memory)

MATHEMATICS-II