MATHEMATICS (Science Group) 017/1 (New Scheme)
PAPER : PART – I (9th Class) SECONDARY Academic Session 2016-18 (AJK)
MARKS: 60 (SUBJECTIVE PART) (Group – II) TIME : 2:10 Hours

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SECTION – I

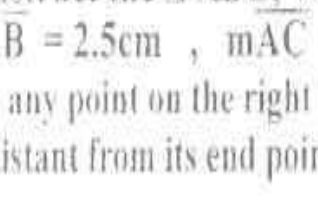
2- Attempt any six parts. (6 x 2 = 12)

i	Define singular and non-singular matrix	ii	Find the invers of $B = \begin{bmatrix} 3 & 6 \\ 2 & 4 \end{bmatrix}$ if it exists
iii	Express $\frac{3-5i}{2-7i}$ in the standard form of $a+bi$.	iv	Simplify $\left(\frac{14x^{-2}y^{-4}}{7x^{-3}y^{-6}}\right)^{-2}$, $x \neq 0, y \neq 0$
v	Define scientific Notation.	vi	Find the value of x. $\text{Log}_{625} 5 = 2x$
vii	If $x + \frac{1}{x} = 4$. then find $x^3 + \frac{1}{x^3}$	viii	State factor theorem.
ix	Factorize $x^3 - 6x^2 + 8x$		

3- Attempt any six parts. (6 x 2 = 12)

i	Define least common multiple of two expressions.	ii	Find H.C.F of $14x^4y^5z^5$; $49x^2yz^3$
iii	Define multiplicative property of inequality of real numbers.	iv	Solve the equation $6x + 62 = 100$
v	Write formula for degree Fahrenheit in terms of degree Celsius.	vi	Write the mid-point formula between any two points.
vii	Find the distance between the points P(4 , 2) and Q(- 4 , 5)	viii	What is meant by S.A.A postulate.
ix	Define the point of trisection.		

4- Attempt any six parts. (6 x 2 = 12)

i	. Find the area of geometric figure. 	ii	In a Δ ABC as shown in the figure, $\overrightarrow{CT}$ bisects $\angle C$ and it meets $\overline{AB}$ at T then find the length of m $\overrightarrow{CT}$
iii	Prove that the triangle having sides of the following measures, from right triangle, a = 1.5 cm , b = 2 cm , c = 2.5 cm	iv	Which of the following sets of lengths can represent the measures of the sides of triangles? (a) 3 , 4, 7 (b) 6 , 8 , 10
v	Define Similar triangles.	vi	Define right bisector of a line segment.
vii	Define obtuse angled triangle.	viii	Construct the triangle ABC when its sides are $m\overline{AB} = 6$ cm , $m\overline{BC} = 3.5$ cm , $m\overline{AC} = 5$ cm
ix	Define circum centre of a triangle.		

SECTION – II

Note:- Attempt any three questions. Question No.9 is Compulsory. (8 x 3 = 24)

a) Solve the system of linear equations by Cramer's rule.
$4x - 3y = 2$; $3x + 4y = 7$ (04)

b) Simplify $\frac{9^{n+1} \times 10^{2n} \times 4^{3m+3n}}{15^{2n+2} \times 8^{2m+2n}}$ (04)

a) Use common logarithms to evaluate the following express your answer with four significant digits. $\sqrt[3]{\frac{4.813 \times 0.329}{6.475}}$ (04)

b) Find the value of $a + b + c$, when, (04)
$a^2 + b^2 + c^2 = 8$ and $ab + bc + ca = 4$

a) If $2x^4 + 3x^2 - mx + 2$ is divided by $x - 1$, then remainder is 6. Find the value of m. (04)

b) Find the H.C.F by division $y^4 - 5y^2 + 4$, $y^5 - 11y + 10$ (04)

a) Solve the inequalities, $x \in R$. Also show on number line. (04)
$3x - 5 \geq 7x + 15$

b) Construct the Δ ABC, When its sides are given.
$m\overline{AB} = 2.5$cm , $m\overline{AC} = 5$ cm , $m\angle A = 60^\circ$ (04)

Prove that: any point on the right bisector of a line segment is equidistant from its end points. (08)

Prove that : Triangles on equal bases and of same altitudes are of equal area.

(The End)

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