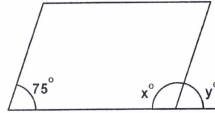
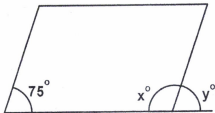


Mathematics (Science Group) Paper: I ریاضی (سائنس گروپ) پرچہ: I
Time: 2:10 Hours Group - I وقت: 2:10 گھنٹے گروپ: I
Marks: 60
Note: Section I is compulsory. Solve any THREE (3) questions from Section II. However question No. NINE (9) is compulsory.

Section I

- 2- Write short answers to any SIX questions: (2 x 6 = 12)
- If $A = \begin{bmatrix} 4 & 0 \\ -3 & 2 \end{bmatrix}$ then find $|A|$
 - Simplify $\sqrt{64x^3y^2}$
 - Simplify $5^3 + (5^2)^3$
 - Find the value of "x" if $\log_{64} 8 = \frac{x}{2}$
 - If $\log 2 = 0.3010$, $\log 3 = 0.4771$, $\log 5 = 0.6990$, then find the value of $\log 45$
 - Simplify $\sqrt{45} - 3\sqrt{20} + 4\sqrt{5}$
 - Define binomial surd.
 - Factorize $144a^2 + 24a + 1$
 - Factorize $2x - 128x^3$

- 3- Write short answers to any SIX questions: (2 x 6 = 12)
- Find square root by factorization $x^2 - 1 + \frac{1}{4x^2}$
 - Solve $9 - 7x > 19 - 2x$, where $x \in R$
 - Solve $|2x + 3| = 11$
 - Find the values of m and c by expressing in the form of $y = mx + c$;
 $2x + y - 2 = 0$
 - If $F = \frac{9}{5}C + 32$, then find F if $C = 50^\circ$
 - Find the distance between two points $A(5, 2)$, $B(-3, -2)$
 - Find the mid point between two points $A(4, -4)$, $B(-4, 4)$
 - What is meant by $A.S.A \cong A.S.A$
 - Find the unknown values of x° and y° in given figure.



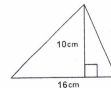
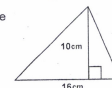
- 4- Write short answers to any SIX questions: (2 x 6 = 12)
- Define Bisector of an angle.
 - Verify that 13cm, 12cm and 5cm are the sides of a triangle.
 - Define Ratio.

- 2 -

iv- Find the value of 'x'.



- Verify that the triangle having following measures of sides is right-angled triangle:
 $a = 1.5\text{cm}$, $b = 2\text{cm}$, $c = 2.5\text{cm}$
- Find the area of a square whose length of one side is 9cm
- Find the area of given figure
- Define orthocentre.
- Construct a $\triangle ABC$, in which
 $m\angle A = 4.2\text{cm}$, $m\angle B = 3.9\text{cm}$, $m\angle C = 3.6\text{cm}$



Section II

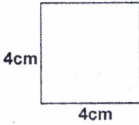
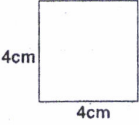
- (a) Solve by Cramer's rule:
 $2x + 3y = -6$
 $2x + 5y = -10$
- (b) Simplify: $\left(\frac{a^p}{a^q}\right)^{p+q} \div 5(a^p \cdot a^q)^{p-q}$, $a \neq 0$
- (a) Use log tables to find the value of $\sqrt[3]{2.709} \times \sqrt[3]{1.239}$
- (b) If $6x - \frac{1}{6x} = 6$, then find the value of $216x^3 - \frac{1}{216x^3}$
- (a) If $(x+2)$ is a factor of $3x^2 - 4kx - 4k^2$, then find the values of k.
- (b) Use division method to find the square root of $\frac{x^2}{y^2} - 10\frac{x}{y} + 27 - 10\frac{y}{x} + \frac{y^2}{x^2}$ ($x \neq 0, y \neq 0$)
- (a) Solve for 'x': $|x+2| - 3 = 5 - |x+2|$
- (b) Construct a triangle PQR and draw its altitudes, if $m\angle P = 6\text{cm}$, $m\angle Q = 4.5\text{cm}$, $m\angle R = 5.5\text{cm}$
- Prove that the bisectors of the angles of a triangle are concurrent.

OR

Prove that triangles on equal bases and of equal altitudes are equal in area.

11-1st A 124-123000

نوٹ: ہر سوال کے چار ممکنہ جوابات A، B، C اور D دیئے گئے ہیں۔ جوابی کاپی پر ہر سوال کے سامنے دیئے گئے دائروں میں سے درست جواب کے مطابق متعلقہ دائرہ کو مارکر پاپین سے بھر دیجئے۔ ایک سے زیادہ دائروں کو پُر کرنے یا کاٹ کر پُر کرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔

- 1- 1- The medians of a triangle cut each other in the ratio _____.
 1 : 1 (D) 2 : 1 (C) 3 : 1 (B) 4 : 1 (A)
- 2- The ratio between two quantities a and b is represented by
 $a \longleftrightarrow b$ (D) $a \cong b$ (C) $a = b$ (B) $a : b$ (A)
- 3- One angle of a parallelogram is 55° , the remaining angles are of measures
 $125^\circ, 125^\circ, 125^\circ$ (D) $55^\circ, 55^\circ, 125^\circ$ (C) $55^\circ, 55^\circ, 55^\circ$ (B) $55^\circ, 125^\circ, 125^\circ$ (A)
- 4- Distance between the points (1, 0) and (0, 1) is
 $\sqrt{2}$ (D) 2 (C) 1 (B) 0 (A)
- 5- $x = \underline{\hspace{1cm}}$ is a solution of the inequality $-2 < x < \frac{3}{2}$.
 0 (D) $\frac{3}{2}$ (C) 3 (B) -5 (A)
- 6- If $\log_4 x = 2$, then $x = \underline{\hspace{1cm}}$
 $\frac{1}{16}$ (D) $\frac{1}{8}$ (C) 16 (B) 8 (A)
- 7- Factors of $8x^3 + 27y^3$ are _____.
 $(2x - 3y), (4x^2 - 9y^2)$ (B) $(2x + 3y), (4x^2 + 9y^2)$ (A)
 $(2x - 3y), (4x^2 + 6xy + 9y^2)$ (D) $(2x + 3y), (4x^2 - 6xy + 9y^2)$ (C)
- 8- _____ is the order of a square matrix.
 2-by-3 (D) 2-by-1 (C) 3-by-1 (B) 3-by-3 (A)
- 9- Obtuse angled triangle has _____ angle/s greater than 90° .
 3 (B) 1 (D) 2 (A) none of these (C)
- 10- Area of square is _____.
 4cm² (D) 64cm² (C)
 4cm² (B) 8cm² (A)
- 11- $(\sqrt{7} + \sqrt{3})(\sqrt{7} - \sqrt{3}) = \underline{\hspace{1cm}}$
 52 (D) 10 (C) 46 (B) 4 (A)
- 12- If $(x, 0) = (0, y)$, then $(x, y) = \underline{\hspace{1cm}}$
 (1, 1) (D) (0, 0) (C) (1, 0) (B) (0, 1) (A)
- 13- H.C.F of $a^2 - b^2$ and $a^3 - b^3$ is _____.
 $a^2 - ab + b^2$ (D) $a - b$ (C) $a + b$ (B) $a^2 + ab + b^2$ (A)
- 14- Sign used for congruency of two triangles is _____.
 $\sim$ (D) $\longleftrightarrow$ (C) $\cong$ (B) $=$ (A)
- 15- $\sqrt{4x^0} = \underline{\hspace{1cm}}$
 4 (D) 2x (C) 2 (B) 4x (A)

Mathematics (Science Group) Paper: I ریاضی (سائنس گروپ) I پرچہ I کیٹوری سکول پانٹ I کلاس نمبر I کا نام
Time: 2:10 Hours Group: II وقت: 2:10 گھنٹے درکار گروپ
Marks: 60 SUBJECTIVE امتحانی
Note: Section I is compulsory. Solve any THREE (3) questions (3) نوٹ: حصہ اول لازمی ہے۔ حصہ دوم میں سے کوئی سے تین (3) مسائل حل کیجئے۔ تاہم سوال نمبر نو (9) لازمی ہے۔
from Section II. However question No. NINE (9) is compulsory

Section I حصہ اول

2- Write short answers to any SIX questions: (2 x 6 = 12) کئی سے چھ (6) مسائل کے مختصر جوابات تحریر کیجئے۔

- Perform the indicated operations and simplify.
[1 3 2]+([2 1 0]-[1 3 2])
i- Use law of exponents to simplify $(2x^5y^{-4})(-8x^{-3}y^2)$
ii- Find the value of x and y, if $x-iy-3=6-7i$
iii- Find the value of x from the statement $\log_2 x = 5$
iv- If $\log 2 = 0.3010, \log 3 = 0.4771, \log 5 = 0.6990$, then find the value of $\log 32$
v- If $a+b=10$ and $a-b=6$, then find the value of (a^2+b^2)
vi- Simplify $\left(\sqrt{2}+\frac{1}{\sqrt{3}}\right)\left(\sqrt{2}-\frac{1}{\sqrt{3}}\right)$
vii- Factorize $3x^2-75y^2$
viii- Use remainder theorem to find the remainder when $8x^4+4x^3-3x+2$ is divided by $(x+3)$

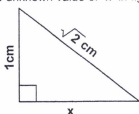
- Find the L.C.M of the expression $39x^5y^6z^2$ and $91x^5y^6z^2$
ii- Solve for 'x' $|8x-3|=|4x+5|$
iii- Solve the inequality $-4 < 3x+5 < 8$
iv- Draw the graph of the equation $y=4x$
v- Find the values of 'm' and 'c' by expressing in the form of $y=mx+c$, $2x-y=-3$
vi- Find the distance between the following pairs of points $A(3, -1), B(3, -4)$
vii- Find the mid point of the line segment joining pair of points $A(4, -1), B(4, -4)$
viii- What is meant by S. A. A $\cong$ S. A. A
ix- Define quadrilateral.

3- Write short answers to any SIX questions: (2 x 6 = 12) کئی سے چھ (6) مسائل کے مختصر جوابات تحریر کیجئے۔

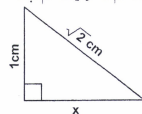
- Find the L.C.M of the expression $39x^5y^6z^2$ and $91x^5y^6z^2$
ii- Solve for 'x' $|8x-3|=|4x+5|$
iii- Solve the inequality $-4 < 3x+5 < 8$
iv- Draw the graph of the equation $y=4x$
v- Find the values of 'm' and 'c' by expressing in the form of $y=mx+c$, $2x-y=-3$
vi- Find the distance between the following pairs of points $A(3, -1), B(3, -4)$
vii- Find the mid point of the line segment joining pair of points $A(4, -1), B(4, -4)$
viii- What is meant by S. A. A $\cong$ S. A. A
ix- Define quadrilateral.

4- Write short answers to any SIX questions: (2 x 6 = 12) کئی سے چھ (6) مسائل کے مختصر جوابات تحریر کیجئے۔

- How are the right bisectors of the sides of a triangle?
ii- Can the following set of the lengths be the lengths of the sides of a triangle? 3cm, 4cm, 5cm
iii- What are similar triangles?
iv- Find the unknown value of 'x' in figure.

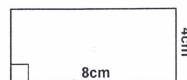


(دیکھئے)



- 2 -

- What is Pythagoras theorem?
vi- What is altitude of a triangle?
vii- Find the area.



- Define Circumcentre.
ix- Construct a ΔXYZ in which $m\angle X = 5.5^\circ, m\angle Y = 4.5^\circ, m\angle Z = 90^\circ$

Section II حصہ دوم

(ہر سوال کے 8 نمبر اور ہر حصے کے 4 نمبر)

- (الف) Solve by using Crammer's rule $3x-y=-4$
 $4x-5y=6$
(ب) Simplify $\frac{(216)^{\frac{2}{3}}(25)^{\frac{1}{2}}}{(0.04)^{-\frac{1}{2}}}$
- (الف) Use logarithm to find value of $\frac{0.7214 \times 20.37}{60.8}$
(ب) If $l+m+n=7$ and $l^2+m^2+n^2=81$, then find value of $lm+mn+ln$
- (الف) If $(x-1)$ is a factor of $x^3-kx^2+11x-6$, then find the value of k.
(ب) Use division method to find the square root of $\frac{x^2}{y^2}-10\frac{x}{y}+27-10\frac{y}{x}+\frac{y^2}{x^2}$
- (الف) Solve the equation $\frac{2x}{2x+5}=\frac{2}{3}-\frac{5}{4x+10}$, $x \neq -\frac{5}{2}$
(ب) Construct ΔABC . Draw the bisectors of its angles $m\angle A=4.2^\circ, m\angle B=6^\circ$ and $m\angle C=5.2^\circ$
- Prove that "Any point inside an angle, equidistant from its arms, is on the bisector of it."

OR

Prove that "Triangles on the same bases and of the same (i.e. equal) altitudes are equal in area."

12-1stA 124-116000