PAPER CODE NUMBER: 5197

2015 (A)

SSC PART-I (9th CLASS)

MATHEMATICS (SCIENCE GROUP) GROUP-I

TIME ALLOWED: 20 Minutes — **OBJECTIVE** — MAXIMUM MARKS: 15

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) If $a:b=c:d$ then a, b, c and d are said to be in:-
(A) Proportion (B) Ratio (C) Equal (D) Unequal

(2) The unit of area is _____ real number.
(A) Negative (B) Neutral (C) Positive (D) Positive and Negative

(3) The medians of a triangle cut each other in the ratio of:-
(A) 4 : 1 (B) 3 : 1 (C) 2 : 1 (D) 1 : 1

(4) If $\begin{vmatrix} 2 & 6 \\ 3 & x \end{vmatrix} = 0$ then x is equal to:-
(A) 9 (B) 6 (C) −6 (D) −9

(5) $\left(\frac{25}{16}\right)^{\frac{-1}{2}} = ?$
(A) $\frac{5}{4}$ (B) $\frac{4}{5}$ (C) $\frac{-5}{4}$ (D) $\frac{-4}{5}$

(6) $\log_y x$ will be equal to:-
(A) $\frac{\log_z x}{\log_y z}$ (B) $\frac{\log_x z}{\log_y z}$ (C) $\frac{\log_z x}{\log_z y}$ (D) $\frac{\log_z y}{\log_z x}$

(7) $\frac{a^2-b^2}{a+b}$ will be equal to:-
(A) $(a-b)^2$ (B) $(a+b)^2$ (C) $a+b$ (D) $a-b$

(8) Factors of a^4-4b^4 are:- (A) $(a-b)(a+b)(a^2+4b^2)$
(B) $(a^2-2b^2)(a^2+2b^2)$ (C) $(a-b)(a+b)(a^2-4b^2)$ (D) $(a-2b)(a^2+2b^2)$

(9) The square root of a^2-2a+1 is:-
(A) $\pm(a+1)$ (B) $\pm(a-1)$ (C) $a-1$ (D) $a+1$

(10) If x is no larger than 10, then
(A) $x \ge 8$ (B) $x \le 10$ (C) $x < 10$ (D) $x > 10$

(11) If $x=2$; $y=2x+1$ then y is:-
(A) 2 (B) 3 (C) 4 (D) 5

(12) Mid-point of the points $(0, 0)$ and $(2, 2)$ is:-
(A) $(1, 1)$ (B) $(1, 0)$ (C) $(0, 1)$ (D) $(-1, -1)$

(13) A ray has end points:- (A) 1 (B) 2 (C) 3 (D) 4

(14) The symbol of Parallelogram is:-
(A) $\|$ (B) $\|^{gm}$ (C) $^{gm}\|$ (D) $=$

(15) Any point inside an _____ equidistant from its arms, is on the bisector of it. (A) Side (B) Angle (C) Triangle (D) Circle

Ans. (M.A15,I):1a,2c,3c,4a,5b,6c,7d,8b,9b,10b,11d,12a,13a,14b,15b

2015 (A)

SSC PART-I (9th CLASS)

MATHEMATICS (SCIENCE GROUP) GROUP-I

TIME ALLOWED: 2.10 Hours — **SUBJECTIVE** — MAXIMUM MARKS: 60

NOTE: - Write same question number and its part number on answer book, as given in the question paper.

SECTION-I

2. Attempt any six parts. 12 = 2 x 6

(i) Define Diagonal Matrix with example.

(ii) Find Multiplicative Inverse. $B=\begin{bmatrix} 1 & 2 \\ -3 & -5 \end{bmatrix}$

(iii) Express $\frac{1}{1+2i}$ in the standard form $a+bi$

(iv) Solve the equation for real x and y $(2-3i)(x+yi)=4+i$

(v) Evaluate $\log 512$ to the base $2\sqrt{2}$

(vi) Calculate $\log_2 3 \times \log_3 8$

(vii) Reduce the rational expression in the lowest form $\frac{(x+y)^2-4xy}{(x-y)^2}$

(viii) If $x=4-\sqrt{17}$ then find $x-\frac{1}{x}$

(ix) Factorize:- $27+8x^3$

3. Attempt any six parts. 12 = 2 x 6

(i) Find HCF by factorization. $x^2+5x+6,\ x^2-4x-12$

(ii) Define Inequality.

(iii) Solve $9-7x>19-2x$ where $(x \in R)$

(iv) Find the midpoint of the line segment joining the points $A(2,-6)$ and $B(3,-6)$

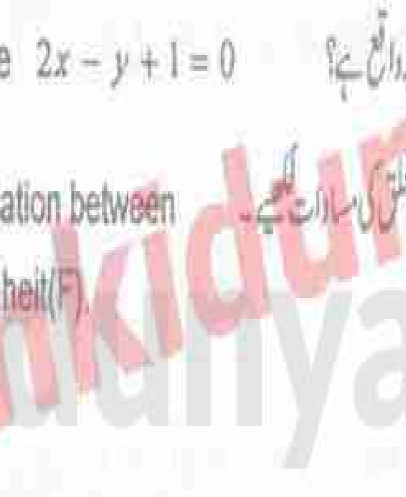
(v) Does the point $P(2, 5)$ lie on the line $2x-y+1=0$

(vi) Write the equation which shows the relation between Degree Celsius(C) and Degree Fahrenheit(F).

(vii) Define a triangle in a plane.

(viii) Describe S.S.S postulate.

(ix) If the given figure $ABCD$ is a parallelogram, then find x



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(2)

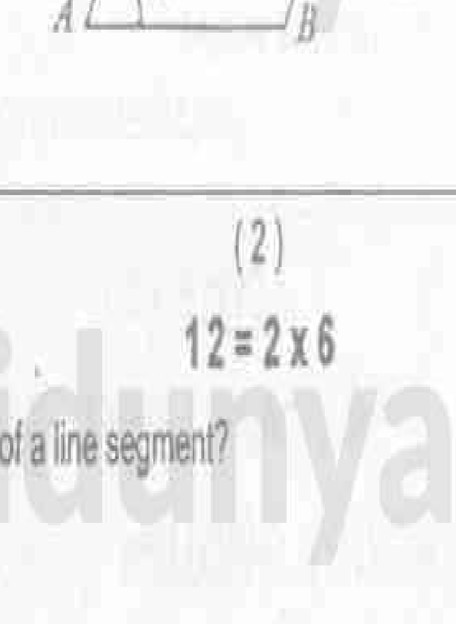
4. Attempt any six parts. 12 = 2 x 6

(i) What do you mean by right bisector of a line segment?

(ii) Define Obtuse-angled triangle.

(iii) Define Ratio.

(iv) In isosceles ΔPQR, find the values of x, y



(v) State Pythagoras Theorem.

(vi) $3cm$, $4cm$, $7cm$ are not lengths of a triangle. Why?

(vii) Define Triangular Region.

(viii) Construct ΔABC in which $m\overline{AB}=4.5cm$, $m\overline{BC}=3.1cm$, $m\overline{CA}=5.2cm$

(ix) Define incentre of a triangle.

SECTION-II

NOTE: - Attempt any three questions. 24 = 8 x 3

5.(A) Solve the following linear equations by Cramer's Rule.
$4x+y=9, \quad -3x-y=-5$

(B) Simplify:- $\left(\frac{a^{2l}}{a^{l+m}}\right)\left(\frac{a^{2m}}{a^{m+n}}\right)\left(\frac{a^{2n}}{a^{n+l}}\right)$

6.(A) Use log table to find the value of $\frac{(8.97)^3 \times (3.95)^2}{\sqrt[3]{15.37}}$

(B) Simplify:- $\frac{2}{\sqrt{5}+\sqrt{3}}+\frac{1}{\sqrt{3}+\sqrt{2}}-\frac{3}{\sqrt{5}+\sqrt{2}}$

7.(A) Factorize each of the following cubic polynomial by Factor Theorem. $x^3-6x^2+3x+10$

(B) For what value of k, $(x+4)$ is the HCF of $x^2+x-(2k+2)$ And $2x^2+kx-12$?

8.(A) Find the solution set of $|2x+3|=11$ and also check.

(B) Construct a ΔABC, in which $m\overline{AB}=3cm$, $m\overline{AC}=3.2cm$, $m\angle A=45°$

9. Prove that any point equidistant from the end points of a line segment is on the right bisector of it. OR Prove that the parallelogram on equal basis and having the same (or equal) altitude are equal in area.