**RUBRIC: SSC 1st ANNUAL EXAMINATION 2022 Revised final correction by anwaar sb dated 02-06-22 at 3:15**

**SUBJECT: MATHEMATICS SSC- I (Local**

| **Q.# /Part #** | **Criteria**  | **Level 1 (Marks)** | **Level 2(Marks)** | **Level 3 (Marks)** | **Level 4 (Marks)** | **Level 5 (Marks)** |
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| $$2(i)$$ | Finding the values of $x$ and $y$  | Correctly simplifying LHS by scalar multiplication and addition of matrices(2) | Correct scalar multiplication or addition of matrices(1) | Wrong answer(0) |  |  |
| Correctly finding the values of $x$ and $y$(2) | Correctly finding the value of either $x$ or $y$ (1) | Wrong answer(0) |  |  |
| $$2\left(ii\right)$$ | Simplifying and writing the answer in the form $a+bi$ | Correctly rationalizing (2) | Partially correct(1) | Wrong answer(0) |  |  |
| Correctly simplifying and writing in the form $a+bi$ (2) | Partially correct(1) | Wrong answer(0) |  |  |
| $$2(iii)$$ | Simplifying by using the laws of exponents  | Correctly applying the laws of exponents and converting division to multiplication(2) | Either correctly applying the laws of exponents or converting division to multiplication(1) | Wrong answer(0) |  |  |
| Correctly applying the laws of exponents and simplifying the expression(2) | Either correctly applying the Laws of exponents or simplifying the expression(1) | Wrong answer(0) |  |  |
| $$2(iv)$$ | Finding the value of $x$ | Correct conversion of logarithmic form to its equivalent exponential form(1) | Wrong answer(0) |  |  |  |
| Correctly simplifying the expression and finding the value of $x^{3}$(2) | Partially correct(1) | Wrong answer(0) |  |  |
| Finding the correct value of $x$(1) | Wrong answer(0) |  |  |  |

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| $$2(v)$$ | Rationalizing and finding the values | Finding the correct value of $\frac{1}{x}$ by Rationalizing(2) | Partially correct(1) | Wrong answer(0) |  |  |
| Finding the correct values of $x+ \frac{1}{x}$ and $x - \frac{1}{x}$ (2) | Finding the correct value of either $x+ \frac{1}{x}$ or $x - \frac{1}{x}$ (1) | Wrong answer(0) |  |  |
| $$2(vi)$$ | Factorizing the expression | Correctly arranging of the terms(2) | Partially correct(1) | Wrong answer(0) |  |  |
| Correctly factorizing(2) | Partially correct(1) | Wrong answer(0) |  |  |
| $$2(vii)$$ | Finding HCF | Correctly factorizing all three expressions(3) | Correctly factorizing any two expressions(2) | Correctly factorizing any one expression(1) | Wrong answer(0) |  |
| Finding the correct value of H.C.F(1) | Wrong answer(0) |  |  |  |
| $$2(viii)$$ | Solving the inequality  | Correctly applying LCM on both sides(1) | Wrong(0) |  |  |  |
| Finding correct values of y(2) | Partially correct(1) | Wrong answer(0) |  |  |
| Correctly finding the solution set (1) | Wrong answer(0) |  |  |  |
| $2(ix$) | Solving linear equation involving absolute value | Correctly simplifying $\frac{7x-4}{5}=\frac{2}{5}$ and finding the correct value of $x$(2) | Partially correct(1) | Wrong answer(0) |  |  |
| Correctly simplifying $\frac{7x-4}{5}=-\frac{2}{5}$ and finding the correct value of $x$(2) | Partially correct(1) | Wrong answer(0) |  |  |
| $2(x$) | Drawing graph by taking at least four ordered pairs | Correctly drawn graph from the given equation:1. Labeling the coordinate axes
2. Plotting correct ordered pairs on the coordinate axes
3. Drawing a straight line by joining the points.

(4) | Any two correct steps(3) | Any one correct step(2) | Partially correct(1) | Wrong answer(0) |
| $$2(xi)$$ | Using distance formula to show the condition of collinearity of three points | Correctly finding the values of $\left|AB\right|$, $\left|BC\right|$ and $\left|AC\right|$(3) | Correctly finding the values of any two(2) | Correctly finding the value of any one(1) | Wrong answer(0) |  |
| Justifying the condition of collinearity(1) | Wrong answer(0) |  |  |  |
| $$2(xii)$$ | Any point on the bisector of an angle is equidistant from its arms | Correct figure, given, to prove, construction(2)  | Any three correctly shown aspects (3) | Any two correctly shown aspects(2) | Any one correctly shown aspect(1) | Wrong answer(0) |
| Proof with correct statements and correct reasons (2) | Proof with correct statements and partially correct reasons (1.5) | Proof with correct statements without reasons (1) | Wrong answer(0) |  |
| 2(xiii) | Find the value of $x$ from the given figure | Correctly substituting the values in the equation(1)  | Wrong answer(0) |  |  |  |
| Correct Simplification(2) | Partially correct(1) | Wrong answer(0) |  |  |
| Finding the correct value of $x$(1) | Wrong answer(0) |  |  |  |
| $$2(xiv)$$ | Find the values of $x$ and$ y$ from the given figure | Correct substitution of values from the figure in the given equation(2) | Partially correct(1) | Wrong answer(0) |  |  |
| Constructing the second equation from the figure $y-7=x-1$ and finding the correct value of y (2) | Partially correct(1) | Wrong answer(0) |  |  |

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| $$3$$ | Solving the system of linear equations by using matrix inversion method | Correctly writing the system of equations in matrix form and expressing it as $X=A^{-1}B$ (2) | Partially Correct (1) | Wrong answer(0) |  |  |
| Correctly finding the values of det A and adj of A (2) | Either correctly finding the values of det A or adj of A  (1) | Wrong answer(0) |  |  |
| Correctly finding $A^{-1}$(2) | Partially Correct (1) | Wrong answer(0) |  |  |
| Finding the correct values of $x$ and $y$(2) | Finding the correct values of either $x$ or $y$ (1) | Wrong answer(0) |  |  |
| $$4$$ | Showing that the given points are vertices of a parallelogram  | Correctly finding the values of $\left|AB\right|$, $\left|BC\right|$, $\left|DC\right|$ and $\left|AD\right|$(4) | Correctly finding any three values (3) | Correctly finding any two values (2) | Correctly finding any one value (1) | Wrong answer(0) |
| Correctly showing that opposite sides are equal(4) | Any two sides equal(2) | Partially Correct(1) | Wrong answer (0) |  |
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| 5 | Solving the system of linear equation by using graphical method | Correct construction of two tables of values(4) | Correct construction of one table of values(2) | Partially correct(1) | Wrong answer(0) |  |
| Correct plotting of points and correct drawing of 1st straight line(2)  | Either correct plotting of points or correct drawing of 1st straight line (1) | Wrong answer(0) |  |  |
| Correct plotting the points and correct drawing 2nd straight line(2)  | Either correct plotting of points or correct drawing of 2nd straight line (1) | Wrong answer(0) |  |  |

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| 6 | Proving that if two angles of a triangle are congruent, then the sides opposite to them are also congruent | Correct figure, given, to prove, construction(4)  | Any three correctly shown aspects(3) | Any two correctly shown aspects(2) | Any one correctly shown aspect(1) | Wrong answer (0) |
| Proof with correct statements and correct reasons(4) | Proof with correct statements and partially correct reasons(3) | Proof with partially correct statements and partially correct reasons **OR**Proof with correct statements without reasons (2) | Partially correct(1) | Wrong answer(0) |
| 7 | Construction of triangle ABC with two perpendicular bisectors  | Correct construction of triangle ABC by drawing $m\overbar{AB}$, $∠A, m∠B$(4) | Any two correctly shown aspects(3) | Any one correctly shown aspect(2) | Partially correct(1) | Wrong answer (0) |
| Correct construction of two perpendicular bisectors(2)  | Correct construction of any one perpendicular bisector(1) | Partially correct(0.5) | Wrong answer(0) |  |
| Correct steps of construction(2) | Partially correct steps of construction(1) | Wrong answer(0) |  |  |