**RUBRIC: SSC 1st ANNUAL EXAMINATION 2022**

**SUBJECT: MATHEMATICS SSC- I (HA)**

| **Q.# /Part #** | **Criteria** | **Level 1 (Marks)** | **Level 2(Marks)** | **Level 3 (Marks)** | **Level 4 (Marks)** | **Level 5 (Marks)** |
| --- | --- | --- | --- | --- | --- | --- |
|  | Finding the values of and | Correctly simplifying LHS by scalar multiplication and addition of matrices  (2) | Either correct scalar multiplication or addition of matrices  (1) | Wrong answer  (0) |  |  |
| Finding the correct values of and  (2) | Finding the correct value of either or  (1) | Wrong answer  (0) |  |  |
|  | Simplifying and writing the answer in the form | Correctly rationalizing  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
| Correctly simplifying and writing in the form  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
|  | Simplifying using laws of exponents | 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) |  |  |
| 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) |  |  |
|  | Finding the value of | Correct conversion of Logarithmic form to its equivalent exponential form  (1) | Wrong answer  (0) |  |  |  |
| Correctly simplifying the expression and finding the value of  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
| Finding the correct value of  (1) | Wrong answer  (0) |  |  |  |
|  | Finding the values of and | Finding the correct value of by Rationalizing (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
| Correctly finding the values of  and  (2) | Partially correct i.e.  either correct finding of  or  (1) | Wrong answer  (0) |  |  |
|  | Factorizing the expression | Arranging the terms correctly  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
| Correct factorization  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
|  | Finding the Square root | Correctly finding the three quotient terms  (3) | Correctly finding the two quotient terms  (2) | Correctly finding the one quotient term  (1) | Wrong answer  (0) |  |
| Correctly finding the square root value  (1) | Wrong answer  (0) |  |  |  |
|  | Solving the inequality | Correctly applying LCM on both sides  (1) | Wrong  (0) |  |  |  |
| Finding the correct values of  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
| Finding the correct solution set  (1) | Wrong  (0) |  |  |  |
| ) | Solving linear equation involving absolute value | Correctly simplifying and finding the correct value of  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
| Correctly simplifying and finding the correct value of  (2) | Partially correct  (1) | Wrong answer  (0) | Partially correct  (1) |  |
| ) | Drawing graph by taking at least four ordered pairs | Correctly drawn graph from the given equation:   1. Labeling the coordinate axes 2. Correctly Plotting the ordered pairs on the graph 3. Correctly drawing the straight line by joining the points   (4) | Any two correct steps  (3) | Any one correct step  (2) | Partially correct  (1) | Wrong answer  (0) |
|  | Using distance formula to show that given points form a right triangle | Correctly finding the values of , and  (3) | Correctly finding the values of any two (2) | Correctly finding the value of any one  (1) | Wrong answer  (0) |  |
| Applying Pythagoras Theorem to justify that ABC is a right triangle  (1) | Wrong answer  (0) |  |  |  |
|  | Proving that any point inside an angle, equidistant from its arms is on the bisector of it. | Correct figure, given, to prove and construction  (2) | Any three correctly shown aspects  (1.5) | Any two correctly shown aspects  (1) | Any one correctly shown aspect  (0.5) | 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 but without reasons **OR**  Proof with partially correct statements and partially correct reasons  (1) | Wrong answer  (0) |  |
| 2(xiii) | Finding the value of from the given figure | Correct substitution of values from the figure in the given equation  (1) | Wrong answer  (0) |  |  |  |
| Correct Simplification  (2) | Partially correct  (1) | Wrong answer  (0) |  |  |
| Finding the correct value of  (1) | Wrong answer  (0) |  |  |  |
|  | Finding the value of from the given figure | Correctly finding the values of and  (2) | Correctly finding the values of either or  (1) | Wrong answer  (0) |  |  |
| Correctly applying the Pythagoras theorem and finding the correct value of  (2) | Either correctly applying the Pythagoras theorem or finding the correct value of  (1) | Wrong answer  (0) |  |  |
|  | Solving the system of linear equations by using matrix inversion method | Correctly writing the system of equations in matrix form and expressing it as  (2) | Either correctly writing the system of equations in matrix form or expressing it as  (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  (2) | Partially Correct  (1) | Wrong answer  (0) |  |  |
| Finding the correct values of and  (2) | Finding the correct values of either or  (1) | Wrong answer  (0) |  |  |
|  | Verifying the condition of parallelogram using its vertices | Correctly finding the values of , , and  (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  (1) | Partially correct  (0.5) | Wrong answer  (0) |  |  |
| Correctly calculating the length of diagonal  (1) | Partially correct (0.5) | Wrong answer  (0) |  |  |
| Correctly applying and verifying the Pythagoras theorem  (2) | Either correctly applying or verifying the Pythagoras theorem  (1) | Wrong answer  (0) |  |  |
| 5 | Solving the system of linear equations by using graphical method | Correct construction of two tables of values  (3) | Correct construction of one table of values  (1.5) | Partially correct  (1) | Wrong construction  (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 drawing  (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 drawing  (0) |  |  |
| Finding the correct solution set  (1) | Wrong answer  (0) |  |  |  |
| 6 | Proving that if two opposite sides of a quadrilateral are congruent and parallel, it is a parallelogram | 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) |
| Correct proof with complete statements and reasons  (4) | Proof with correct statements and partially correct reasons  (3) | Proof with partially correct statements with 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 , and  (3) | Any two correctly shown aspects (2) | Any one correctly shown aspect  (1) | Wrong construction  (0) |  |
| Correct construction of three altitudes of  (3) | Correct construction of any two altitudes  (2) | Correct construction of any one altitude  (1) | Wrong construction  (0) |  |
| Correct steps of construction  (2) | Partially correct steps of construction  (1) | Wrong answer  (0) |  |  |