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|  | **THE ROYAL CAMBRIDGE SCHOOL SYSTEM**  **[REGISTERED]**  **VRG # 127/16**  **MAIN SHOUKAT TOWN, GHAZI ROAD, LAHORE CANTT.**  **PH: 0311-4189819 & 0301-4031552** |
| **FINAL EXAM OF MATHS CLASS 9TH 2020-2021** | |
| **NAME:** | |

**QUESTION NO 1: MARK THE CORRECT ANSWER (15 MARKS)**

1. Order of [1 2] is:
2. 1 by 1 b)1 by 2 c)2 by 1 d) none of the above
3. A square matrix in which all non-diagonal elements are zero and diagonal elements are same:
4. Scalar b) null c)symmetric d)transpose
5. =
6. b) c) d)
7. [DET(A)]I =
8. ADJ(A) x A b)AxA c) A|A| d) 2 x I
9. Scalar matrix is:
10.  b)  c) [0 1] d) both A & B
11. 7.25 is \_\_\_\_\_\_\_\_\_\_.
12. Rational b) irrational c) integer d)complex
13. The statement “2/3 is irrational” is.
14. True b) depends upon condition c) false d) none of these
15. Simplifying gives.
16. -125 b) 5 c) -5 d)
17. is equal to.
18. 125 b) -25 c) d) 25
19. Imaginary part of is.
20. 2i b) 2 c) -2 d) -2i
21. The solution to formula
22. b) c) d)
23. The solution to formula (a+b)(a-b) is.
24. b) c) d) 4ab
25. Conjugate of is.
26. b) c) d) none of these
27. Degree of polynomial is.
28. 2 b) 4 c) d)
29. Degree of any polynomial is
30. The highest power b) the lowest power

c) the greater coefficient d) value with + sign

**QUESTION NO 2: SHORT PROBLEMS, ANY 6 (12 MARKS)**

1. Is this singular or not. A =
2. Define symmetric matric and diagonal matrix with example.
3. Find multiplicative inverse if exists. C = [
4. Write order of the following.
5. b)
6. Find negative of A =
7. A= , find A +
8. Define null matrix with example.
9. Multiply [-1 2]
10. Define transpose of a matrix with example.

**QUESTION NO 3: SHORT PROBLEMS, ANY 6 (12 MARKS)**

1. Define a non-terminating rational number with example.
2. Define natural numbers and whole numbers.
3. Evaluate.
4. Write the real an imaginary part of the following.
5. b)
6. Find the value of x and y if .
7. Simplify .
8. Simplify .
9. Express the recurring decimal as a rational number of p/q form. 0.67.
10. Show in form .

**QUESTION NO 4: SHORT PROBLEMS, ANY 6 (12 MARKS)**

1. Define polynomial with example.
2. Define rational expression.
3. Express in simplest form. .
4. and , then find the value of .
5. Reduce into lowest form. .
6. Simplify by combining similar terms. .
7. Simplify .
8. Perform the indicated operations and Simplify .
9. Reduce into lowest form. .

**QUESTION NUMBER 9 IS COMPULSORY, ATTEMPT ANY 1 PART OF IT. ATTEMPT ANY 2 QUESTIONS FROM QUESTION NO 5, 6, 7 AND 8.**

**QUESTION NO 5: LONG PROBLEMS**

1. Solve the pair of equations by crammer rule (4 marks)
2. if and C =

Verify that = (4 marks)

**QUESTION NO 6: LONG PROBLEMS**

1. Use laws of exponents to simplify. (4 marks)
2. Find the values of x and y if x + iy + 1 = 4 – 3i. (4 marks)

**QUESTION NO 7: LONG PROBLEMS**

1. If (, then find the value of . (4 marks)
2. Find the products using the formulas. (4 marks)

**QUESTION NO 8: LONG PROBLEMS**

1. If , find the value of . (4 marks)
2. Determine whether the given matrices are multiplicative inverses of each other.

and (4 marks)

**QUESTION NO 9: THEOREM. ATTEMPT ANY ONE FROM THE FOLLOWING. (8 marks)**

1. Any point on the right bisector of a line segment is equidistant from its end points.
2. The right bisectors of the sides of a triangle are concurrent.