**Series EF1GH/4 SET1**

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**Q. P. Code 65/4/1**

**Roll No.**

**G.B.S. Public School, Saraswati Nagar**

**Subject: Mathematics**

**Class: XIIth**

**Time allowed : 1 Hour Maximum Marks : 25**

**General Instructions:**

Read the following instructions very carefully and strictly follow them :

(i) Please check that this question paper contains **4** printed pages.

(ii) This question paper contains **12** questions. **All** questions are **compulsory.**

(iii) This question paper is divided into **four** Sections – **A, B, C and D.**

(iv) In **Section A,** Questions no. **1** to **5** are multiple choice questions (**MCQs**) of **1** mark

each.

(v) In **Section B,** Questions no. **6** to **8** are very short answer (**VSA**) type questions, carrying

**2** marks each.

(vi) In **Section C,** Questions no. **9** to **11** are short answer (**SA**) type questions, carrying

**3** marks each.

(vii) In **Section D,** Questions no. **12** is long answer (**LA**) type questions, carrying

**5** marks.­­­­

(viii) Use of calculators is **not** allowed.

**SECTION A**

This section comprises multiple choice questions (**MCQs**) of **1** mark each.

Q 1. If

Q 2. If A and B are two matrices such that AB = A and BA = B, then is equal to

1. B (b) A (c) I (d) O

Q. 3. If A and B are square matrices of order 3 such that AB = 6I. If then

(a) (b) 2 (c) 18 (d) 54

Q 4. Assertion (A): The matrix A = is singular for x = 5.

Reason (R): A square matrix A is singular if

1. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct

explanation of the Assertion (A).

1. Both Assertion (A) and Reason (R) are true, but Reason (R) is **not** the correct

explanation of the Assertion (A).

1. Assertion (A) is true and Reason (R) is false.
2. Assertion (A) is false and Reason (R) is true.

Q. 5. Assertion (A): A skew-symmetric matrix of odd order is not invertible.

Reason (R): A skew-symmetric matrix of odd order is singular.

1. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct

explanation of the Assertion (A).

1. Both Assertion (A) and Reason (R) are true, but Reason (R) is **not** the correct

explanation of the Assertion (A).

1. Assertion (A) is true and Reason (R) is false.
2. Assertion (A) is false and Reason (R) is true.

**SECTION B**

This section comprises very short answer (**VSAs**) type questions of **2** marks each.

Q. 6 Find the value of the expression.

Q. 7 In a legislative assembly election, a political group hired a public relations firm to

promote its candidate in three ways: telephone, house calls, and letters. The cost per

contact (in paise) is given in matrix A as

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The number of contacts of each type made in two cities X and Y is given by

. Find the total amount spent by the

group in the two cities X and Y.

Q. 8 Find equation of line joining (3, 1) and (9, 3) using determinants.

**SECTION C**

This section comprises short answer (**SA**) type questions of **3** marks each.

Q.9 Show that

Q.10 Two farmers Ramkishan and Gurcharan Singh cultivates only three varieties of rice

namely Basmati, Permal and Naura. The sale (in Rupees) of these varieties of rice by

both the farmers in the month of September and October are given by the following

matrices A and B.

September Sales (in Rupees)

October Sales (in Rupees)

1. Find the combined sales in September and October for each farmer in each

variety.

1. Find the decrease in sales from September to October.
2. If both farmers receive 2% profit on gross sales, compute the profit for each farmer and for each variety sold in October.

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Q. 11 Solve system of linear equations, using matrix method.

**SECTION D**

This section comprises long answer (**LA**) type questions of **5** marks each.

Q. 12 If A = , then show that . Hence find .

**OR**

If A = and I is the identity matrix of order 2, show that

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