



# SMART TEST SERIES

www.notespk.com : info@notespk.com

Name:		Subject:	Mathematics-11
Roll # :		Unit(s):	3,
Class:	Inter Part-I	Test:	Type 8 - Short Test (No Choice) - Marks=30
Date:		Time:	

## Q.1 Circle the Correct Answers.

(6x1=6)

- 1 Every Diagonal matrix is also:  
(A) Triangular Matrix (B) Scalar Matrix (C) Rectangular Matrix (D) Symmetric Matrix
- 2  $\begin{bmatrix} 0 & 0 & 0 \end{bmatrix}$  is:  
(A) scalar matrix (B) diagonal matrix (C) identity matrix (D) null matrix
- 3 If A and B are matrices then  $(AB)^t$  is equal to:  
(A)  $B^tA^t$  (B)  $A^tB^t$  (C) AB (D) BA
- 4 If two rows of any square matrix are identical, then the value of determinant is:  
(A) 3 (B) 2 (C) 1 (D) 0
- 5 The cofactor of an element  $a_{ij}$  denoted by  $A_{ij}$  is:  
(A)  $(-1)^{ij}M_{ij}$  (B)  $(-1)^{i+j}M_{ij}$  (C)  $(-1)^{i-j}M_{ij}$  (D)  $(1)^{i+j}M_{ij}$
- 6 If  $A = \begin{bmatrix} 1 & -2 & 3 \\ -2 & 3 & 1 \\ 4 & -3 & 2 \end{bmatrix}$ , then  $A_{33}$  equals:  
(A) -1 (B) 1 (C) 7 (D) -7

## Q.2 Write short answers of the following questions.

(7x2=14)

- (i) Define row and column matrices.
- (ii) Find the inverse of  $\begin{bmatrix} -2 & 3 \\ -4 & 5 \end{bmatrix}$
- (iii) Evaluate the determinant:  $\begin{vmatrix} 5 & -2 & -4 \\ 3 & -1 & -3 \\ -2 & 1 & 2 \end{vmatrix}$
- (iv) Show that  $\begin{vmatrix} 2 & 3 & 0 \\ 3 & 9 & 6 \\ 2 & 15 & 1 \end{vmatrix} = 9 \begin{vmatrix} 2 & 1 & 0 \\ 1 & 1 & 2 \\ 2 & 5 & 1 \end{vmatrix}$ .
- (v) Without expansion show that  $\begin{vmatrix} \alpha & \beta + \gamma & 1 \\ \beta & \gamma + \alpha & 1 \\ \gamma & \alpha + \beta & 1 \end{vmatrix} = 0$ .
- (vi) What is a skew Hermitian matrix?
- (vii) Without expansion verify that  $\begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix} = 0$

## NOTE: Attempt the long question.

(5+5=10)

- 3(a) If 'A' is Symmetric or skew-Symmetric, then show that  $A^2$  is Symmetric.
- (b) If  $A = [a_{ij}]_{3 \times 4}$ , then show that  $I_3A = A$