

## Matrices and Determinant

1) The order of the matrix  $[4 \ 7 \ 3]$  is

- A)  $3 \times 1$   
 B)  $1 \times 3$   
 C)  $3 \times 3$   
 D)  $1 \times 1$

2) The value of determinant of the matrix  $\begin{bmatrix} 1 & 3 & 5 \\ 7 & 9 & 11 \\ 13 & 15 & 17 \end{bmatrix}$  is

- A) 0  
 B) 1  
 C) 2  
 D) 3

3)  $\begin{bmatrix} 4 & 0 \\ 0 & 1 \end{bmatrix}$  is a \_\_\_\_\_ matrix.

- A) singular  
 B) unit  
 C) diagonal  
 D) scalar

4) If  $\begin{bmatrix} 6 & I \\ 3 & 2 \end{bmatrix}$  is singular matrix then  $\lambda =$ 

- A) 4  
 B) -4  
 C) 12  
 D) 18

5) A, B, C are three matrices such that  $AB = C$  Then  $B =$ 

- A)  $C^{-1}A$   
 B)  $CA$   
 C)  $A^{-1}C$   
 D)  $AC$   
 E)

6) Value of the determinant of matrix  $\begin{bmatrix} a & 0 & b \\ c & 0 & -d \\ e & 0 & f \end{bmatrix}$  is

- A) 1  
 B) 2  
 C) 0  
 D) 3  
 E)

7) Value of determinant of the matrix  $\begin{bmatrix} a & b+c & 1 \\ b & c+a & 1 \\ c & a+b & 1 \end{bmatrix}$  is

- A) c  
 B) b

- C) a  
 D) 0

8) If B is square matrix and  $B^t = -B$ , then B is called

- A) Symmetric  
 B) Skew symmetric  
 C) Singular  
 D) Non-singular

9) For any two non singular square matrices A and B,  $(AB)^{-1} =$ 

- A) AB  
 B)  $B^{-1}A^{-1}$   
 C)  $A^{-1}B^{-1}$   
 D)  $A^{-1}B$

10) If  $A = \begin{bmatrix} 1 & 2 \\ 3 & -4 \end{bmatrix}$  and  $B = \begin{bmatrix} 6 \\ 5 \end{bmatrix}$  then we can find

- A)  $A + B$   
 B)  $A - B$   
 C) AB  
 D) BA

11) If A is non singular square matrix then  $A^{-1} =$ 

- A)  $\frac{1}{A}$   
 B)  $\frac{1}{|A|}$   
 C)  $\frac{adjA}{|A|}$   
 D)  $\frac{1}{adjA}$

12) If A is matrix of order  $m \times n$  then  $kA$  is of order (k is real number)

- A)  $km \times n$   
 B)  $m \times kn$   
 C)  $km \times kn$   
 D)  $m \times n$

13) The value of determinant of the matrix

$$\begin{bmatrix} 1 & \cos^2 a & \sin^2 a \\ 1 & \cos^2 b & \sin^2 b \\ 1 & \cos^2 c & \sin^2 c \end{bmatrix}$$
 is

- A) 1  
 B) 0

- C) 2
- D) -1

14) The value of determinant of the matrix

$$\begin{bmatrix} \cos 2a & \cos^2 a & \sin^2 a \\ \cos 2b & \cos^2 b & \sin^2 b \\ \cos 2c & \cos^2 c & \sin^2 c \end{bmatrix}$$
 is

- A) 1
- B) 2
- C) 0
- D) -1

15) The value of determinant of the matrix

$$\begin{bmatrix} a^2 - b^2 & b^2 - c^2 & a^2 - c^2 \\ b^2 - c^2 & c^2 - a^2 & b^2 - a^2 \\ c^2 - a^2 & a^2 - b^2 & c^2 - b^2 \end{bmatrix}$$
 is

- A) 0
- B) 1
- C) 2
- D) 3

16) If  $B = \begin{bmatrix} 3 & 5 & 4 \\ 4 & 4 & 6 \\ 1 & 2 & 3 \end{bmatrix}$  then  $-B$  is

- A)  $\begin{bmatrix} -3 & -5 & -4 \\ -4 & -4 & -6 \\ -1 & -2 & -3 \end{bmatrix}$
- B)  $\begin{bmatrix} -3 & 5 & 4 \\ -4 & 4 & 6 \\ -1 & 2 & 3 \end{bmatrix}$

C)  $\begin{bmatrix} 3 & -5 & 4 \\ 4 & -4 & 6 \\ 1 & -2 & 3 \end{bmatrix}$

D)  $\begin{bmatrix} 3 & 5 & -4 \\ 4 & 4 & -6 \\ 1 & 2 & -3 \end{bmatrix}$

17) If  $A = \begin{bmatrix} 3 & 2 & 1 \\ 6 & 5 & 4 \\ 7 & 6 & 4 \end{bmatrix}$  then  $2A$  is

A)  $\begin{bmatrix} 6 & 4 & 2 \\ 6 & 5 & 4 \\ 7 & 6 & 4 \end{bmatrix}$

B)  $\begin{bmatrix} 3 & 2 & 1 \\ 12 & 10 & 8 \\ 7 & 6 & 4 \end{bmatrix}$

C)  $\begin{bmatrix} 3 & 2 & 1 \\ 6 & 5 & 4 \\ 14 & 12 & 8 \end{bmatrix}$

D)  $\begin{bmatrix} 6 & 4 & 2 \\ 12 & 10 & 8 \\ 14 & 12 & 8 \end{bmatrix}$

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