1. Evaluate $\begin{vmatrix} 2 & 5 \\ -1 & -1 \end{vmatrix}$.

a) 3

b) -7

c) 5

d) -2

2. Evaluate $\begin{vmatrix} 5 & -4 \\ 1 & \sqrt{3} \end{vmatrix}$.

a) $4\sqrt{3}+4$

b) $4\sqrt{3}+5$

c) $5\sqrt{3}+4$

d) $5\sqrt{3}-4$

3. Evaluate $\begin{vmatrix} -sin\theta & -1 \\ 1 & sin\theta \end{vmatrix}$.

a) $\cos^2\theta$

b) $-\cos^2\theta$

c) $\cos 2\theta$

d) $\cos\theta$

4. Evaluate $\begin{vmatrix} i & -1 \\ -1 & -i \end{vmatrix}$.

a) 4

b) 3

c) 2

d) 0

5. Evaluate $\begin{vmatrix} 1 & 1 & -2 \\ 3 & 4 & 5 \\ -1 & 2 & 1 \end{vmatrix}$.

a) -6

b) -34

c) 34

d) 22

6. Evaluate $\begin{vmatrix} 5 & 4 & 3 \\ 3 & 4 & 1 \\ 5 & 6 & 1 \end{vmatrix}$.

a) 4

b) -24

c) -8

d) 8

7. Evaluate $\begin{vmatrix} 8x+1 & 2x-2 \\ x^2-1 & 3x+5 \end{vmatrix}$.

a) $-2x^3-26x^2+45x+3$

b) $-2x^3+26x^2+45x+3$

c) $-2x^3+26x^2+45x-3$

d) $-2x^3-26x^2-45x+3$

8. If A= $\begin{bmatrix} 2 & 5 & 9 \\ 6 & 1 & 3 \\ 4 & 8 & 2 \end{bmatrix}$, find |A|.

a) 352

b) 356

c) 325

d) 532

9. Evaluate $\begin{vmatrix} \sqrt{3} & \sqrt{2} \\ -1 & 2\sqrt{3} \end{vmatrix}$.

a) 6-3$\sqrt{2}$

b) 6-$\sqrt{2}$

c) 6+3$\sqrt{2}$

d) 6+$\sqrt{2}$

10. Find the value of x if $\begin{vmatrix} 3 & x \\ 2 & x^2 \end{vmatrix} = \begin{vmatrix} 5 & 3 \\ 3 & 2 \end{vmatrix}$.

a) x=1, $-\frac{1}{3}$

b) x=-1, $-\frac{1}{3}$

c) x=1, $\frac{1}{3}$

d) x=-1, $\frac{1}{3}$

11.

1. What is the value of $\begin{vmatrix} -bc & ca+ab & ca+ab \\ ab+bc & -ca & ab+bc \\ bc+ca & bc+ca & -ab \end{vmatrix}$?

a) Σab

b) $(\Sigma ab)^2$

c) $(\Sigma ab)^3$

d) $(\Sigma ab)^4$

12. If the system of equation 2x + 5y + 8z = 0, x + 4y + 7z = 0, 6x + 9y – αz = 0 has a non trivial solution then what is the value of α?

a) -12

b) 0

c) 12

d) 2

13.

3. What is the value of x if, $\begin{vmatrix} x & 3 & 6 \\ 3 & 6 & x \\ 6 & x & 3 \end{vmatrix} = \begin{vmatrix} 2 & x & 7 \\ x & 7 & 2 \\ 7 & 2 & x \end{vmatrix} = \begin{vmatrix} 4 & 5 & x \\ 5 & x & 4 \\ x & 4 & 6 \end{vmatrix}$?

a) 9
b) -9
c) 0
d) Can't be predicted

14.

4. Which one of the following is correct if a, b and c are the sides of a triangle AB

a) ABC is an equilateral triangle
b) ABC is an isosceles triangle
c) ABC is a right angled triangle
d) ABC is a scalene triangle

15.

5. What is the value of k if $\begin{vmatrix} y+z & x & x \\ y & z+x & y \\ z & z & x+y \end{vmatrix}$?

a) 4
b) -4
c) 1
d) 0

16. 1. Which of the following is the formula for cofactor of an element a_{ij} ?

a) $A_{ij}=(1)^{i+j} M_{ij}$
b) $A_{ij}=(-2)^{i+j} M_{ij}$
c) $A_{ij}=(-1)^{i+j} M_{ij}$
d) $A_{ij}=(-1)^{i-j} M_{ij}$

17.

What is the minor of the element 5 in the determinant $\Delta=\begin{vmatrix} 1 & 5 & 4 \\ 2 & 3 & 6 \\ 7 & 9 & 4 \end{vmatrix}$?

a) -34
b) 34
c) -17
d) 21

18.

Find the minor and cofactor respectively for the element 3 in the determinant Δ=

a) M_{21}=-5, A_{21}=-5
b) M_{21}=5, A_{21}=-5
c) M_{21}=-5, A_{21}=5
d) M_{21}=5, A_{21}=5

19.

Find the minor of the element 1 in the determinant $\Delta=\begin{vmatrix} 1 & 5 \\ 3 & 8 \end{vmatrix}$.

a) 5
b) 1
c) 8
d) 3

20.

Find the cofactor of element -3 in the determinant $\Delta=\begin{vmatrix} 1 & 4 & 4 \\ -3 & 5 & 9 \\ 2 & 1 & 2 \end{vmatrix}$.

a) -4
b) 4
c) -5
d) -3

ANSWERS-1.(A) 2.(C) 3.(A) 4.(D) 5.(B) 6.(C) 7.(B) 8.(A) 9.(D) 10.(A)

11.(C) 12.(C) 13.(B) 14.(B) 15.(A) 16.(C) 17.(A) 18.(B) 19.(C) 20.(A)