MHT CET 2024 Question Paper
May 2 Shift 2 PCM

Ques 1. If B = $\begin{bmatrix} 3 & \alpha & -1 \\ 1 & 3 & 1 \\ -1 & 1 & 3 \end{bmatrix}$ **is the adjoint of a 3×3 matrix A and |A| = 4 then a is equal to**

(A) 1

(B) 0

(C) -1

(D) -2

Ans. (A) 1

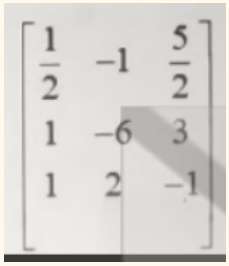
Ques 2. IUPAC name of given ether is

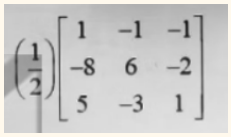
Ans. Methoxy ethane

Ques 3. If A = $\begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$**, then** A^{-1} **=**

A. $\left(\frac{1}{2}\right)\begin{bmatrix} 0 & 1 & 2 \\ 3 & 2 & 1 \\ 4 & 2 & 3 \end{bmatrix}$

B. $\begin{bmatrix} \frac{1}{2} & \frac{-1}{2} & \frac{1}{2} \\ -4 & 3 & -1 \\ \frac{5}{2} & \frac{-3}{2} & \frac{1}{2} \end{bmatrix}$

C. 

D. 

Ans. (A) On the right side

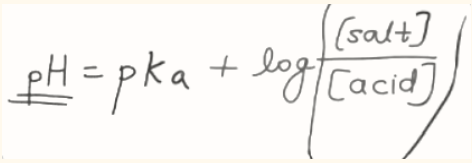
Ques 4. Which of the following is Clemmensen reduction.

Ques 5. Which element shows lower oxidation state in 3d series

(A) Sc
(B) Ti
(C) Zn
(D) None of the above

Ans. (C) Zn

Ques 6. Calculate the the pH of

Ans. 

Ques 7. What is the conc. of H+ ion if pH is 2.7

Ans. 1.99×10^{-3}M

Ques 8. The relationship between solubility of gas in a liquid at constant temperature and external pressure is ?

Ans. S ∝ P

Ques 9. How many unit particles in a BCC Unit cell ?

- **A. 2**
- **B. 1**
- **C. 4**
- **D. 3**

Ans. A

Ques 10. The most suitable reagent for the conversion of $R\text{-}CH_2\text{-}OH = R\text{-}CHO$ is?

Ans. PCC

Ques 11. Edge length of bcc unit cell is

Ans. $4r/\sqrt{3}$, Where, a= edge length

Ques 12. Preliminary Test of Nanoparticles is

- **(A) X-ray diffraction**
- **(B) Scanning of neutron**
- **(C) Scanning of electron**
- **(D) None of these**

Ans. (D) None of these

Ques 13. IUPAC name of following Haloarene is

Ans. “halo-” +parent hydrocarbon name.

Ques 14. The converse of ((~p) Λ q) ⇒ r is

A. ((~P) V q) ⇒ r
B. (~r) ⇒ p Λ q
C. (p V (~q))⇒ (~r)
D. (~r) ⇒ ((~P) Λ q)

Ans. C

Ques 15. The negative of (p∧ (~q)) V (~p) is equivalent to :

A. p Λ q
B. P Λ (~q)
C. p Λ (q Λ (~p))
D. p V (q V (~p))

Ans. A

Ques 16. The variance of the following probability distribution is,

x	0	1	2
$P(X)$	$\frac{9}{16}$	$\frac{3}{8}$	$\frac{1}{16}$

A. ⅛
B. ⅝
C. ¼
D. ⅜

Ans. D