



## CHEMISTRY

### BOOKS - SAI CHEMISTRY (TELUGU ENGLISH)

#### EAMCET - 2018 (TS) SHIFT - 1

#### Exercise Chemistry

1. The energy of an electron in the 3rd orbit of H- atom ( in J ) is approximately.

A.  $-2.18 \times 10^{16}$

B.  $-2.42 \times 10^{19}$

C.  $-1.21 \times 10^{19}$

D.  $-3.63 \times 10^{-19}$

**Answer: B**



**Watch Video Solution**

2. The wavelength (in m ) of a particle of mass  $11.043 \times 10^{-26}$  kg moving with a velocity of  $6.0 \times 10^7 \text{ m s}^{-1}$  is

A.  $1.0 \times 10^{16}$

B.  $6.0 \times 10^{-16}$

C.  $1.0 \times 10^{-16}$

D.  $-3.63 \times 10^{16}$

**Answer: C**



**Watch Video Solution**

3. Covalent bond length of chlorine molecules is 1.98 Å.

Covalent radius in ( in Å) of chlorine atom is

A. 1.98

B. 0.99

C. 3.96

D. 0.49

**Answer: B**



Watch Video Solution

4. The covalency of Al in  $[AlCl(H_2O)_5]^{2+}$  is

A. 3

B. 5

C. 1

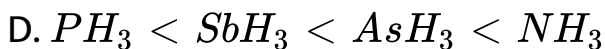
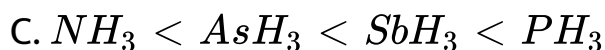
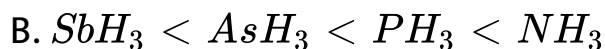
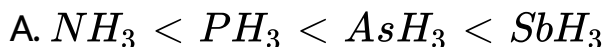
D. 6

**Answer: D**



Watch Video Solution

5. The correct order of bond angles of the given compounds is



**Answer: B**



**Watch Video Solution**

6. The molecular orbital theory supports paramagnetic behavior of

A.  $Be_2$

B.  $C_2$

C.  $N_2$

D.  $O_2$

**Answer: D**



**Watch Video Solution**

7. Which of the following represents van der Waal's equation for n moles of the gas?

A.  $\left(P + \frac{a}{v^2}\right)(v - b) = nRT$

B.  $P(v - b) = nRT$

$$C. \left( P + \frac{a}{v^2} \right) v = nRT$$

$$D. PV + \frac{an^2}{V} - \frac{abn^3}{V^3} - Pnb = nRT$$

**Answer: D**



**Watch Video Solution**

**8.** The kinetic energy in J of 1 mole of  $N_2$  at  $27^\circ C$  is

$$(R = 8.314 \text{ mol}^{-1} \text{ k}^{-1})$$

A. 2494

B. 18706

C. 7482

D. 3741

**Answer: D**

 [Watch Video Solution](#)

9. In the titration of  $I_2$  (aq) by  $S_2O_3^{2-}$  (aq) using the starch indicator, the end point is indicated by

- A. Colourless to blue
- B. Blue to colourless
- C. pink to colourless
- D. Blue to pink

**Answer: B**

 [Watch Video Solution](#)



10. When 10 g of 90% pure limestone is heated, the approximate volume (in L) of  $CO_2$  liberated at STP is

- A. 4.4
- B. 2.0
- C. 4.0
- D. 22.4

**Answer: B**



**Watch Video Solution**

11. At 298 K, the equilibrium constant of the process  $1.5O_2(g) \rightleftharpoons O_3(g)$  is  $3 \times 10^{-29}$ . Standard free energy change (in K. J  $mol^{-1}$ ) of the process is approximately ( $R = 8.314 J mol^{-1} K^{-1}$ ,  $\log 3 = 0.47$ )

A. 724

B. 612

C. 247

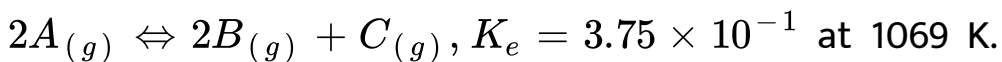
D. 163

**Answer: D**



**Watch Video Solution**

12. For a reaction



The approximate value of  $K_p$  for this reaction at the same temperature is ( $R = 0.082 \text{ Lbar mol}^{-1} \text{ K}^{-1}$ )

A.  $2.4 \times 10^{-4}$

B.  $3.3 \times 10^{-4}$

C.  $33 \times 10^2$

D.  $7.2 \times 10^4$

**Answer: B**



**Watch Video Solution**

13. The degree of dissociation of  $0.1NCH_3COOH$  is (given  $K_a = 1 \times 10^{-5}$ ) approximately

A.  $1 \times 10^{-6}$

B.  $1 \times 10^{-7}$

C.  $1 \times 10^{-3}$

D.  $1 \times 10^{-2}$

**Answer: D**



**Watch Video Solution**

14. Identify the correct statements from the following

(a) In orthoboric acid, boron is in planar geometry

(b) In  $BCl_3$ ,  $NH_3$ , boron has tetrahedral geometry

(c) Aqueous solution of borax is acidic

A.  $a, b$

B.  $b, c$

C.  $a, c$

D.  $a, b, c$

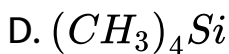
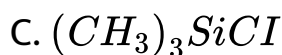
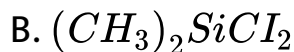
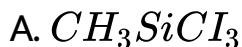
**Answer: A**



**Watch Video Solution**

15. Si reacts with  $CH_3Cl$  at 573 K in the presence of  $Cu$  powder to form methyl substituted chlorosilanes. Among

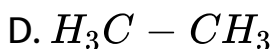
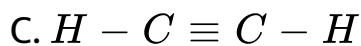
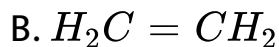
the given methyl substituted chlorosilanes, whose yield is minimum?



**Answer: D**

 [Watch Video Solution](#)

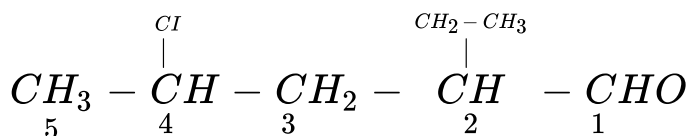
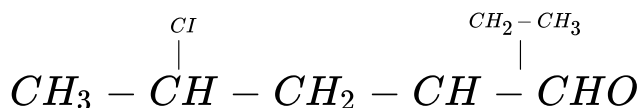
**16.** When vegetation is burnt in the absence of oxygen, which of the following will be formed ?



**Answer: A**

 **Watch Video Solution**

**17. IUPAC name for the following compound is**



A. 2 - chloro - 4 - ethyl pentanal

B. 2 - ethyl - 4 - chlorophetanol

C. 4 - chloro - 2 - ethyl pentanal

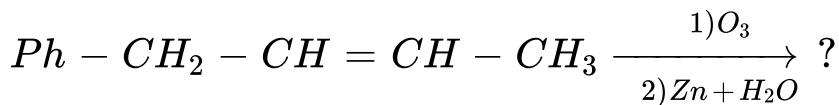
D. 2 - chlorohexan - 4 - al

**Answer: C**



**Watch Video Solution**

**18.** What are the products formed in the reaction given below?



A. Acetic acid and 2 - phenyl acetic acid

B. 2 - Phenyl ethanal and ethanal



C. 2 - Phenyl ethanol and ethanol

D. 1 - Phenyl butane - 2,3 -diol

**Answer: B**



**Watch Video Solution**

19. The major product obtained in the reaction of isobutyl benzene with acetic anhydride in the presence of anhydrous  $AlCl_3$  is

A. p - isobutyl acetophenone

B. acetophenone

C. m - isobutyl acetophenone

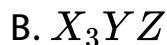
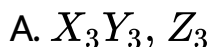
D. o - isobutyl acetophenone

**Answer: A**



**Watch Video Solution**

**20.** A compound is formed by elements of X, Y and Z .  
Atoms of Z (anions) fcc lattice. Atoms of X (cations) occupy all the octahedral voids. Atoms of Y (cations) occupy  $\frac{1}{3}$ rd of the tetrahedral voids. The formula of the compound is



D.  $X_2Y_2Z$

**Answer: A**



**Watch Video Solution**

**21.** A litre of sea water (which weighs 1030 g) contains  $6 \times 10^{-3}g$  of dissolved oxygen . The concentration of dissolved oxygen is p'pm is

A. 5.8

B. 6

C. 6.2

D. 6.4

**Answer: A**



**Watch Video Solution**

**22.** At 300 K, a one litre solution of sucrose (molecular weight : 342 ) was prepared by dissolving 40 g of sucrose. What is the approximate osmotic pressure (in kPa) of solution at the same temperature ?

$$(R = 8.314 \times 10^6 \text{ cm}^3 \text{ Pa K}^{-1} \text{ mol}^{-1})$$

A. 292

B. 500

C. 292000

D. 600

Answer: A



Watch Video Solution

23. If the rate constants of a reaction at 500K and 700K are  $0.002s^{-1}$  and  $0.06s^{-1}$  respectively, the value of  $K^{-1}$  activation energy is

( $R = 8.314Jmol^{-1}K^{-1}$ ,  $\log 3 = 0.477$ )

A.  $49.49 \text{ kJ mol}^{-1}$

B.  $98.98 \text{ kJ mol}^{-1}$

C.  $24.75 \text{ kJ mol}^{-1}$

D.  $12.37 \text{ kJ mol}^{-1}$

**Answer: A**



**Watch Video Solution**

**24.** Identify the correct set of sulphide ores from the following

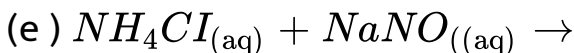
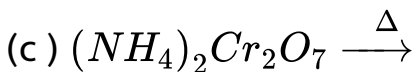
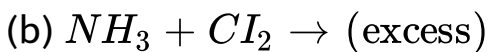
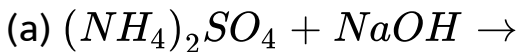
- A. Fool's gold, Calamine, Kaolinite
- B. Sphalerite, Fool's gold, Chalcopyrite's
- C. Copper glance, Siderite, Malachite
- D. Bauxite, Magnetite, Zincite

**Answer: B**



**Watch Video Solution**

25. Identify the reactions in which  $N_2$  is liberated



A. a,b,c

B. c,d,e

C. b,c,e

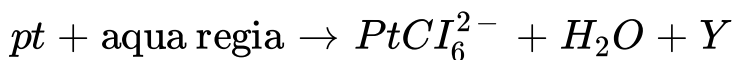
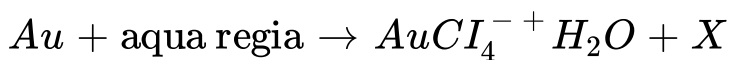
D. a,c,d

Answer: C



Watch Video Solution

26. What are X and Y, respectively in the following reactions?



A.  $N_2O$ ,  $NO$

B.  $N_2O$ ,  $N_2O$

C.  $NO$ ,  $NO$

D.  $NO$ ,  $NO_2$

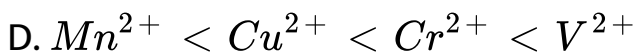
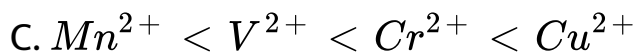
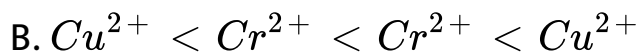
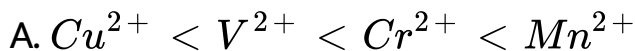
**Answer: C**



Watch Video Solution



27. Which of the following sets correctly represents the increasing paramagnetic property of the ion?



**Answer: A**



**Watch Video Solution**

28. Which of the following molecules / ions can exhibit isomerism?

(A) Tetrahedral  $NiCl_2Br_2^{2-}$  Tetrahedral  $NiCl_2Br_2^{2-}$

(B) Square planar  $Pt(NH_3)_2Cl_2$

(C) Octahedral  $Co(NH_3)_3Cl_3$

(D) Square planar  $Pd(NH_3)_3Br^+$

(E) Octahedral  $Co(end)_3^{3+}$

where, end = 1,2 - di amino ethane

A. A, B, C, D

B. B, C, E

C. B, C, D

D. A, B, C, E

**Answer: B**



**Watch Video Solution**

29. The formation of terylane ( or decron) from ethylene glycol and terephthalic acid is

- A. A condensation polymerization reaction
- B. an anionic polymerization reaction
- C. an addition polymerization reaction
- D. a cationic polymerization reaction

**Answer: A**



[Watch Video Solution](#)

30. Which of the following carbohydrates has a glycosidic linkage?

A. Fructofuranose

B. Ghucopyranose

C. Maltose

D.  $\beta$  - D - Fructose

**Answer: C**



**Watch Video Solution**

**31.** Identify an antioxidant, an antiseptic, and an antibiotic respectively from the following

Equanil      Chloramphenicol      Bithional

(A)                      (B)                      (C)

Aspartme      Dimetapp                      Buty lated hydroxytoluene

(D)                      (E)                      (F)

A. A, C, E

B. F, C, B

C. B, D, E

D. C, D, F

**Answer: B**

 [Watch Video Solution](#)

**32.** Which product of the following reactions fails to give carbyl amine test?

A. Hoffmann bromide degradation

B. Gabriel phthalimide synthesis

C. Reduction of nitrites with  $LiAlH_4$

D. Reduction of tertiary amides with  $LiAlH_4$

**Answer: D**



**Watch Video Solution**