



# CHEMISTRY

## BOOKS - NTA MOCK TESTS

### NTA NEET SET 58

**Chemistry**

1. Which of the given statement is incorrect ?

A. *He* is used in production of powerful super conducting magnets

B. *He* is used for carrying out experiments at low temperature as a cryogenic agent

C. *He* is used as an inert shield for arc welding

D. *He* is used in filling the gas balloons instead of  $H_2$  gas, because He is lighter than inflammable

**Answer: D**



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2. The splitting of spectral lines in an external magnetic field is known as the

A. Photoelectric effect

B. Stark effect

C. Zeeman effect

D. None of these

**Answer: C**



3. Which of the following statements are correct when a mixture of  $NaCl$  and  $K_2Cr_2O_7$  is gently warmed with conc.  $H_2SO_4$ ?

A. A deep red vapour is evolved

B. Chlorine gas is evolved

C. The vapour when passed into NaOH solution gives a yellow solution of



D. Chromyl chloride is formed

**Answer: B**



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4. When propionic acid is subjected to reduction with hydroiodic acid and red phosphorus, the product formed is

A. Butane

B. Propane

C. Ethane

D. None of these

**Answer: B**



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5. In which of following compound a  $p\pi - d\pi$  bonding is present

A. Trisilylamine

B. Graphite

C. Dimethyl amine

D. Diamond

**Answer: A**



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6.  $CH \equiv CH \xrightarrow{Ni(CN)_2} X$  . Identify X in the given reaction

A. Ethane

B. Benzene

C. Cyclooctatetraene

D. Cyclohexane

**Answer: C**



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7. If the vapour pressure of pure water at  $25^{\circ}C$  is 23.8 mmHg, then calculate the vapour pressure lowering caused by the addition of 100 g of sucrose (molecular mass = 342 g/mol) to 100 g of water



A. 00.12 mmHg

B. 0.125 mmHg

C. 1.15 mmHg

D. 1.25 mmHg

**Answer: B**



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**8.** What is the use of  $CuSO_4$  in kjeledahl's method ?

A. Hydrolysing agent

B. Reducing agent

C. Oxidising agent

D. Catalytic agent

**Answer: D**



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**9.** Calculate the radius of Xe atom , If the edge of the unit cell (FCC) is 620 pm.

A. 189.37 pm

B. 209.87 pm

C. 219.25 pm

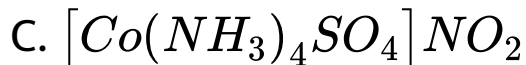
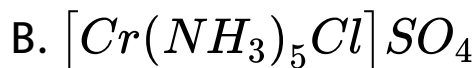
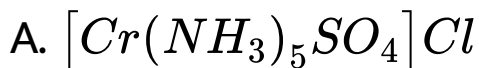
D. 235.16 pm

**Answer: C**



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**10.** Which among the following complex compound will give white precipitate with  $BaCl_2(aq)$  ?



D. Both (A) and (B)

**Answer: B**



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**11.** Reaction of *t* – butyl bromide with sodium methoxide produces

A. t - butyl methyl ether

B. Isobutylene

C. Sodium t - butoxide

D. Isobutane

**Answer: B**



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**12.** At low pressure, the Vander Waal's equation is reduced to

$$A. pV_m = RT + 1$$

$$B. Z = \frac{pV_m}{RT} = 1 + \frac{b}{RT}p$$

$$C. Z = \frac{pV_m}{RT} = 1 - \frac{a}{RT}$$

$$D. Z = \frac{pV_m}{RT} = 1 - \frac{a}{RTV_m}$$

**Answer: D**



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**13.** Reaction of phenol with chloroform/  
sodium hydroxide to give *o* – hydroxy  
benzaldehyde involves the formation of

- A. Dichloro carbene
- B. Trichloro carbene
- C. Chlorine atoms
- D. Chlorine molecules

**Answer: A**



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**14.** With which of the following metal dil.  $HNO_3$  produces nitrous oxide ?

A. Ag

B. Zn

C. Cu

D. Fe

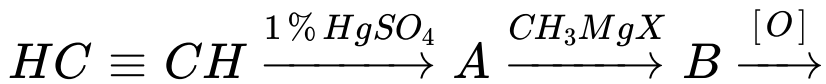
**Answer: B**



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**15.** Find the end product in the given sequence  
of \_\_\_\_\_ reaction





A. Ethanol

B. Acetic acid

C. Acetone

D. Isopropyl alcohol

**Answer: C**



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16. The bond angles of

$NH_3$ ,  $NH_4^+$  and  $NH_2^-$  are in the order

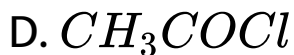
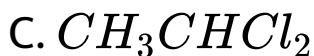
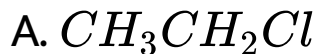


**Answer: B**



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17. which of the following on heating with aqueous KOH produces acetaldehyde?

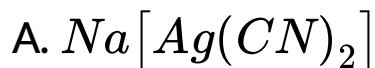


**Answer: C**



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18. During extraction of silver from cyanide process, which of the following is formed?



D. None of these

**Answer: A**



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19. Which gas is emitted in fermentation

A.  $O_2$

B.  $CO_2$

C.  $N_2$

D.  $H_2$

**Answer: B**



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**20.** Dissolution of sodium sulphate in water is exothermic (with evolution of heat). If the temperature is raised for a saturated solution of sodium sulphate , then according to Le - Chatelier principle

A. The solution will become supersaturated

B. Some solid will precipitate out from the solution

C. More solid will dissolve

D. Solution concentration will remain unchanged

**Answer: B**



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21. Which named reaction is used to convert amides into amines

A. Curtius reaction

B. Claisen condensation

C. Hoffmann reaction

D. Schimidt reaction

**Answer: C**



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**22.** Which statement is not correct about

$H_3BO_3$  ?

A. It is a strong tribasic acid



B. It has a layer structure in which planar

$BO_3$  units are joined by hydrogen bonds

C. It is prepared by acidifying an aqueous

solution of borax

D. It does not act as proton donor but acts

as a Lewis acid by accepting hydroxyl ion

**Answer: A**



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23. Which of the given polymers is a natural polymer

A. Polyester

B. Glyptal

C. Starch

D. Nylon - 2 - Nylon - 6

**Answer: C**



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24. What is minimum concentration of  $SO_4^{2-}$  required to precipitate  $BaSO_4$  in solution containing  $1 \times 10^{-4}$  mole of  $Ba^{2+}$  ? ( $K_{sp}$  of  $BaSO_4 = 4 \times 10^{-10}$ )

A.  $2 \times 10^{-3} M$

B.  $2 \times 10^{-7} M$

C.  $4 \times 10^{-6} M$

D.  $4 \times 10^{-10} M$

**Answer: C**



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25. The  $\alpha - D -$  glucose and  $\beta - D -$  glucose differ from each other at one of the carbon atom due to difference in

- A. Conformation
- B. Number of OH groups
- C. Size of hemiacetal ring
- D. Configuration

**Answer: D**



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26. Which of the following ion has maximum value of magnetic moment `



**Answer: C**



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27. The electronic configuration of nitrogen is  $1s^2, 2s^2 2p_x^1 2p_y^1 2p_z^1$  and not  $1s^2, 2s^2 2p_x^2 2p_y^1 2p_z^0$ .

This is explained by

- A. Uncertainty principle
- B. Aufbau's principle
- C. Pauli's exclusion principle
- D. Hund's rule

**Answer: D**



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28. Which of the following antibiotics is ineffective in treatment of pneumonia, and bronchitis?

A. Penicillin

B. Streptomycin

C. Chloramphenicol

D. Sulphaguanidine

**Answer: A**



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29. which of the following reaction characteristics at constant temperature are changing by addition of a catalyst to a reaction

- (i) Activation energy
- (ii) Equilibrium constant
- (iii) Reaction entropy
- (iv) Reaction enthalpy

A. (i) only

B. (iii) only

C. (i) and (ii) only



D. All of these

**Answer: A**



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**30.**  $N_2$  and  $O_2$  are converted into monoanions  $N_2^-$  and  $O_2^-$  respectively. Which of the following statements is wrong ?

A. In  $O_2$ , bond length increases

B. In  $O_2$ , the O - O bond order increases

C. In  $N_2$ , the N - N bond weakens

D.  $N_2^-$  becomes paramagnetic

**Answer: B**



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**31.** The equivalent conductance of 1M benzoic acid is  $12.8\text{ohm}^{-1}\text{cm}^2$  and if the conductance of benzoate ion and  $H^+$  ion at infinite dilution are  $42\text{ohm}^{-1}\text{cm}^2$  and

$288.42 \text{ohm}^{-1} \text{cm}^2$  respectively . Then its degree of dissociation is

A. 0.039 %

B. 3.9 %

C. 0.35 %

D. 39 %

**Answer: B**



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32. Which is true for Internal energy of system is ?

A. State function

B. Path function

C. Both (A) and (B)

D. None of these

**Answer: A**



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33. The boiling point of an aqueous solution of a non - electrolyte is  $100.52^{\circ}C$  . Then freezing point of this solution will be [ Given :  $k_f = 1.86 \text{ K kg mol}^{-1}$ ,  $k_b = 0.52\text{kg mol}^{-1}$  for water]

A.  $0^{\circ}C$

B.  $-1.86^{\circ}C$

C.  $1.86^{\circ}C$

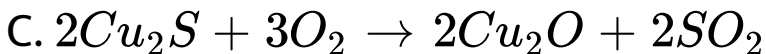
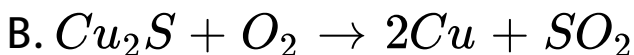
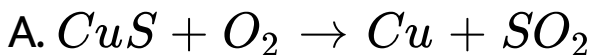
D. None of the above

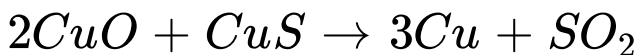
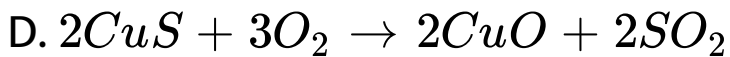
**Answer: B**





**34.** In the extraction of copper, the metal formed in the Bessemer converter is due to the reaction





**Answer: C**



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**35.** What is the nature of the resulting solution prepared from 100ml to 0.2M  $\text{H}_2\text{SO}_4$  added to 100ml of 0.2M  $\text{NaOH}$ .

**A. Neutral**

B. Acidic

C. Basic

D. Slightly basic

**Answer: B**



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**36.** Setting of cement is an

A. Exothermic reaction

B. Endothermic reaction



C. Neither exothermic nor endothermic

D. None of these

**Answer: A**



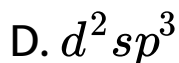
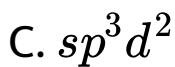
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**37.** What is the hybridization of Fe in complex

$K_3Fe(CN)_6$  is ?

A.  $sp^3$

B.  $dsp^3$



**Answer: D**



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**38.** Which elements in the periodic table show a diagonal relationship ?

A. Elements of first period

B. Elements of second period

C. Elements of third period

D. (B) and (C) both

**Answer: D**



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**39.** Based on Langmuir adsorption isotherm ,at very high pressures the amount of gas adsorbed

- A. Increases first and decreases later with pressure
- B. Reaches a constant limiting value
- C. Goes on decreasing with pressure
- D. Goes on increasing with pressure

**Answer: B**



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40.  $2CuI \rightarrow Cu + CuI_2$  , the given reaction

is an example of

A. Disproportion

B. Neutralisation

C. Oxidation

D. Reduction

**Answer: A**



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41. Which equation gives relation between concentration of ions in solution , electrode potential ( $E$ ) and standard electrode potential ( $E^\circ$  ?)

- A. Faraday's equation
- B. Nernst's equation
- C. Ohm's equation
- D. Kohlrausch's equation

**Answer: B**



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42. For a reaction  $2A \rightarrow B$  Products, doubling the concentration of B alone doubles the rate and doubling the initial concentration of both the reactants increases the rate by a factor of 8. The rate law for the reaction is

A. Rate =  $k[A][B]^2$

B. Rate =  $k[A]^2[B]^2$

C. Rate =  $k[A][B]$

D. Rate =  $k[A]^2[B]$

**Answer: D**



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**43.** Calculate the work done during isothermal reversible expansion of one mole ideal gas from  $10\text{atm}$  to  $1\text{atm}$  at  $300\text{K}$ .

A.  $-4138.8\text{J}$

B.  $-4938.8\text{J}$

C.  $-5744.1\text{J}$

D.  $-6257.2\text{J}$



**Answer: C**



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**44.** If  $C$  the concentration of a weak electrolyte ,  $\alpha$  is the degree of ionization and  $K_a$  is the acid ionization constant , then the correct relationship between  $\alpha$  ,  $C$  and  $K_a$  is

A.  $\alpha^2 = \sqrt{\frac{K_a}{C}}$

B.  $\alpha^2 = \sqrt{\frac{C}{K_a}}$

C.  $\alpha = \sqrt{\frac{C}{K_a}}$

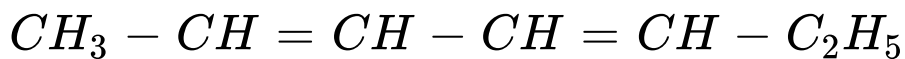
$$D. \alpha = \sqrt{\frac{K_a}{C}}$$

**Answer: D**



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**45.** No. of geometrical isomers possible for the compound



A. 4

B. 3

C. 2

D. 5

**Answer: A**



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