

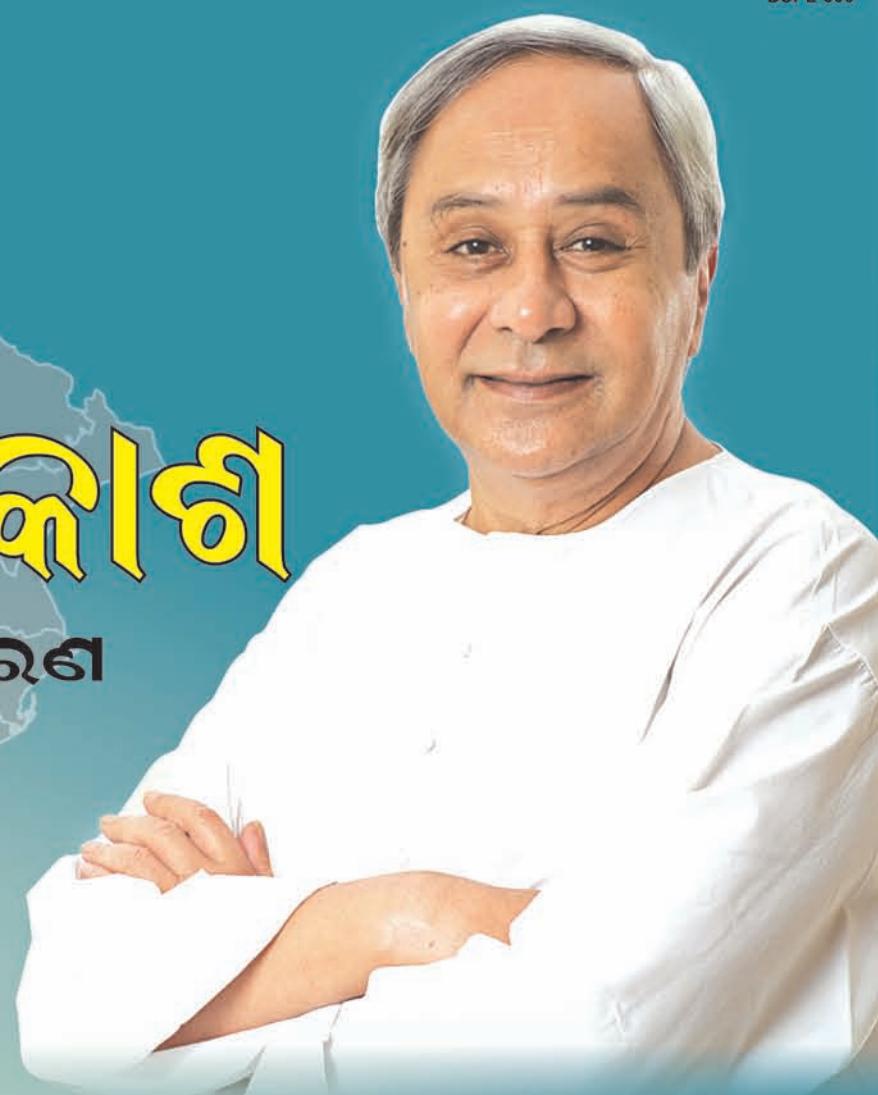


## ଆମ ଗ୍ରୀ ଆମ ବିକାଶ

ନବୀନ ଓଡ଼ିଶାର ନୂତନ କିରଣ

## ଏହି PEETHA

(Peoples' Empowerment - Enabling Transparency and Enhancing Accountability on Odisha Initiatives)



ଘରେ ଘରେ ଆଜି ବିଜୁଳି  
ଓଡ଼ିଶା ଚଳାଣି ବେଳି



ଆମ ମୁଖ୍ୟମନ୍ତ୍ରୀ ଦେଇଥୁବା କଥା ଆଜି କାର୍ଯ୍ୟରେ ପରିଣତ ହୋଇଛି । ଓଡ଼ିଶାର ସବୁ ଘରକୁ ବିଜୁଳି ଶକ୍ତି ଯୋଗାଇବା କଥା ଆଜି ସତ ହୋଇଛି । ୯୪ ଲକ୍ଷରୁ ଅଧିକ ଘରକୁ ଆମେ ବିଦ୍ୟୁତ୍ ସଂଯୋଗ ପହଞ୍ଚାଇ ସାରିଛୁ । ଯଦି କୌଣସି ପରିବାର ବିଦ୍ୟୁତ୍ ସଂଯୋଗ ଏପାଏଁ ପାଇ ପାରି ନାହାନ୍ତି, ସେମାନେ ଏହି ଡିସେମ୍ବର ମାସର ୧୫ ରୁ ୨୦ ତାରିଖ ମଧ୍ୟରେ ପ୍ରତି ପଞ୍ଚାଷ୍ଟରେ ଅନୁଷ୍ଠାତ ହେଉଥିବା 'ପିଠା' (PEETHA) ଶିବିରରେ ପହଞ୍ଚି ବିନା ଜମାରେ ବିଦ୍ୟୁତ୍ ସଂଯୋଗ ପାଇଁ ଆବେଦନ କରନ୍ତୁ ।

ଶକ୍ତି ବିଭାଗ, ଓଡ଼ିଶା ସରକାର





























# Exam Mate



Mock Test Paper for Std X, XII CBSE Board, IIT - JEE Main &amp; Advanced.

FOR ANSWERS VISIT : [www.dharitri.com](http://www.dharitri.com)

## MOCK TEST PAPER # 1 JEE (Main) (CHEMISTRY)

Time : 1 hour

Maximum Marks: 120

## GENERAL INSTRUCTIONS

For each question you will be given 4 Marks if you have darkened only the bubble corresponding to the correct answer and zero mark if no bubble is darkened. In all other cases, minus one (-1) Marks (NEGATIVE MARKING) will be given.

## SINGLE CORRECT ANSWER

- Which of the following method is(are) used to remove temporary hardness of water ?
    - Boiling hard water
    - Clark's method
    - Calgon's method

The correct choice is :

    - Only I
    - Both I and II
    - II and III
    - I, II and III
  - Metallic gold crystallizes in FCC lattice with edge-length of 4.070 Å . Closest distance between gold atoms is:
    - 2.035 Å
    - 8.140 Å
    - 2.878 Å
    - 1.357 Å
  - The ratio of the energy of the electron in ground state of hydrogen to that of the electron in first excited state of Be<sup>3+</sup> is:
    - 1:4
    - 1:8
    - 1:16
    - 16:1
  - The correct order of increasing C–O bond length of CO, CO<sub>3</sub><sup>2-</sup>, CO<sub>2</sub> is:
    - CO<sub>3</sub><sup>2-</sup> < CO<sub>2</sub> < CO
    - CO<sub>2</sub> < CO<sub>3</sub><sup>2-</sup> < CO
    - CO < CO<sub>2</sub> < CO<sub>3</sub><sup>2-</sup>
  - H<sub>2</sub>(g) +  $\frac{1}{2}$ O<sub>2</sub>(g) → H<sub>2</sub>O(l)
  - B.E. (H–H) = x<sub>1</sub>; B.E. (O = O) = x<sub>2</sub>; B.E. (O–H) = x<sub>3</sub>; Latent heat of vaporization of water liquid into water vapour = x<sub>4</sub>, then  $\Delta H_f$  (heat of formation of liquid water) is
    - $x_1 + \frac{x_2}{2} - x_3 + x_4$
    - $2x_3 - x_1 - \frac{x_2}{2} - x_4$
    - $x_1 + \frac{x_2}{2} - 2x_3 - x_4$
    - $x_1 + \frac{x_2}{2} - 2x_3 + x_4$
  - Depression of freezing point of 0.01 molal aq. CH<sub>3</sub>COOH solution is 0.022°C. 1 molal urea solution freezes at –2.0° C. Assuming molality equal to molarity, pH of CH<sub>3</sub>COOH solution will be:
    - 2
    - 3
    - 3.2
    - 4.2
  - For reaction A → Product, [A]<sub>0</sub> = 2M. After 10 minutes reaction is 10% completed. If  $\frac{d[A]}{dt} = -k[A]$  then T<sub>50</sub> is approximately: (log 3 = 0.48)
    - 0.693 min
    - 69.3 min
    - 66.0 min
    - 0.693 min
  - How many Faradays are required to reduce one mole of MnO<sub>4</sub><sup>-</sup> to Mn<sup>2+</sup>?
    - 1
    - 2
    - 3
    - 5
  - The rate of a chemical reaction generally increases rapidly even for small temperature increase because of a rapid increase in the:
    - collision frequency
    - fraction of molecules with energies in excess of the activation energy
    - activation energy
    - average kinetic energy of molecules
  - Amount of gas adsorbed per g of adsorbent increases with pressure, but after certain limit is reached, adsorption becomes constant. It is where:
    - multilayers are formed
    - desorption takes place
    - temperature is increased
    - adsorption also starts
  - Bond-length of HCl is 1.25 Å (e = 4.8 × 10<sup>-10</sup> e.s.u.). If  $\mu = 1.02D$ , then HCl is:
    - 100% ionic
    - 83% covalent
    - 50% covalent
    - 40% ionic
  - Ag<sub>2</sub>S + NaCN → (A). (A) + Zn → (B). (B) is a metal. Hence, (A) and (B) are:
    - Na<sub>2</sub>[Zn(CN)<sub>4</sub>]<sub>2</sub>Zn
    - Na[Ag(CN)<sub>2</sub>]Ag
    - Na[Ag(CN)<sub>4</sub>]Ag
    - Na<sub>3</sub>[Ag(CN)<sub>4</sub>]Ag
  - H<sub>2</sub>O<sub>2</sub> can be obtained when following reacts with H<sub>2</sub>SO<sub>4</sub> except with:
    - PbO<sub>2</sub>
    - BaO<sub>2</sub>
    - Na<sub>2</sub>O<sub>2</sub>
    - SrO<sub>2</sub>
  - Molten sodium chloride conducts electricity due to the presence of:
    - Free electrons
    - Ions
    - Na atom
    - Cl atom
  - Which of the following compounds possess Lewis acid character?
    - BF<sub>3</sub>
    - SiF<sub>4</sub>
    - PF<sub>5</sub>

Select the correct answer using the codes given below:

    - 1 alone
    - 1, 2 and 3
    - 2 and 3
    - 1 and 3
  - Match List I with List II and select the correct answer using the codes given below the lists:
- |                 |                |
|-----------------|----------------|
| List I (Metals) | List II (Ores) |
| [P] Zinc        | 1. Azurite     |
| [Q] Tin         | 2. Carnallite  |
| [R] Copper      | 3. Calamine    |
| [S] Magnesium   | 4. Cassiterite |

## Codes:

- P → 3, Q → 4, R → 2, S → 1
- P → 3, Q → 4, R → 1, S → 2
- P → 4, Q → 1, R → 3, S → 2
- P → 4, Q → 3, R → 2, S → 1

- Melting points of NaCl, NaBr, NaI and NaF will be in the order:
  - NaI < NaBr < NaCl < NaF
  - NaF < NaCl < NaBr < NaI
  - NaBr < NaF < NaCl < NaI
  - NaCl < NaI < NaF < NaBr
- Which of the following compounds show optical isomerism? (en = ethylenediamine)
  - cis-[Co(NH<sub>3</sub>)<sub>4</sub>Cl<sub>2</sub>]<sup>+</sup>
  - trans-[Co(en)<sub>2</sub>Cl<sub>2</sub>]<sup>+</sup>
  - cis-[Co(en)<sub>2</sub>Cl<sub>2</sub>]<sup>+</sup>
  - [Co(en)<sub>3</sub>]<sup>3+</sup>

Select the correct answer using the codes given below:

- I and II
- II and III
- III and IV
- I, III and IV

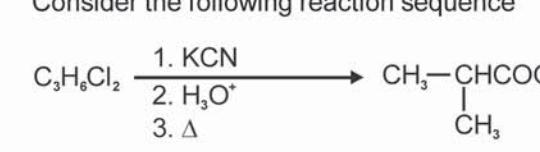
- When H<sub>2</sub>O<sub>2</sub> is added to an acidified solution of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>:
  - solution turns green due to formation of Cr<sub>2</sub>O<sub>3</sub>
  - solution turns yellow due to formation of K<sub>2</sub>CrO<sub>4</sub>
  - a deep blue-violet coloured compound CrO(O<sub>2</sub>)<sub>2</sub> is formed
  - solution gives green ppt of Cr(OH)<sub>3</sub>
- Consider the following compounds:
  - Sulphur dioxide
  - Hydrogen peroxide
  - Ozone

Among these compounds, those which can act as bleaching agents would include:

  - I and III
  - II and III
  - I and II
  - I, II and III

- In the detection of nitrogen, blue colour is due to the formation of Prussian blue. It is:
  - NaFe<sup>III</sup>[Fe<sup>II</sup>(CN)<sub>6</sub>]
  - NaFe<sup>II</sup>[Fe<sup>III</sup>(CN)<sub>6</sub>]
  - Na<sub>4</sub>[Fe(CN)<sub>6</sub>]
  - Na<sub>3</sub>[Fe(CN)<sub>6</sub>]

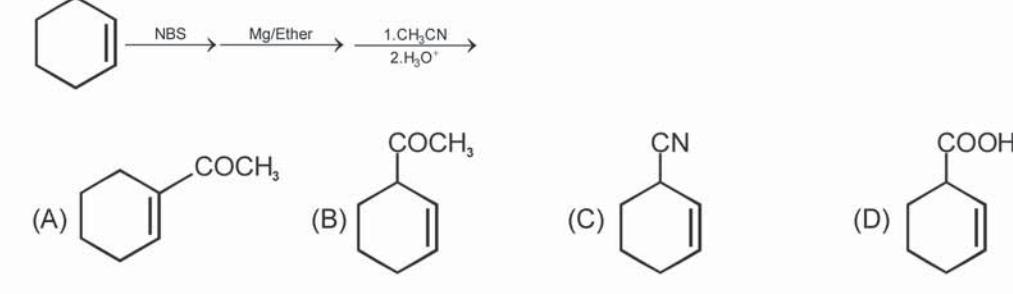
- Total number of isomers of C<sub>4</sub>H<sub>10</sub>O will be:
  - 4
  - 5
  - 6
  - 7
- An alkene on ozonolysis yields only ethanal. There is an isomer of this which on ozonolysis yields:
  - propanone and methanal
  - propanone and ethanal
  - ethanal and methanal
  - only propanone
- Consider the following reaction sequence



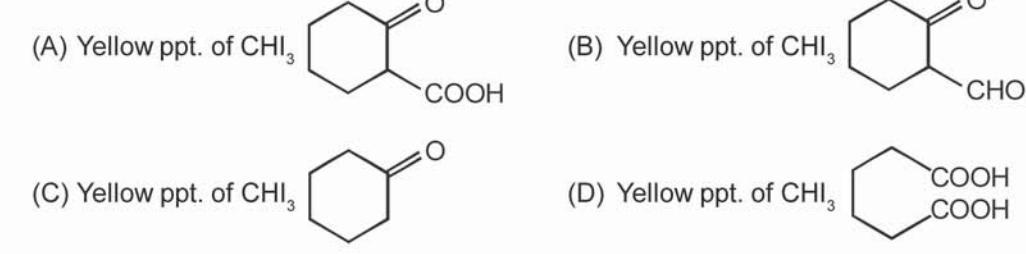
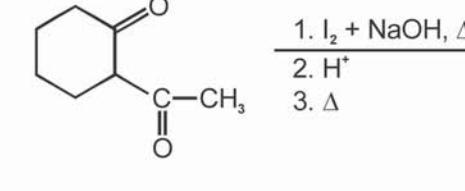
Hence (A) is:

- 1, 1-Dichloro propane
- 1, 2-Dichloro propane
- 2, 2-Dichloro propane
- 1, 3-Dichloro propane

- End product of the following sequence of reaction is:



- End product of the following sequence of reaction are



- Which of the following compound has maximum percentage of Cl?
  - PVC
  - BHC
  - Neoprene
  - DDT
- Which of the following is not a pyrimidine base?
  - Thymine
  - Guanine
  - Cytosine
  - Uracil
- On hydrolysis, which of the following carbohydrates gives only glucose?
- Which of the following pairs of isomers and types of isomerism are correctly matched?
  - [Co(NH<sub>3</sub>)<sub>5</sub>(NO<sub>2</sub>)] and [Co(NH<sub>3</sub>)<sub>5</sub>(ONO)]Cl<sub>2</sub> ..... linkage.
  - [Cu(NH<sub>3</sub>)<sub>4</sub>][PtCl<sub>4</sub>] and [Pt(NH<sub>3</sub>)<sub>4</sub>][CuCl<sub>4</sub>] ..... Coordination.
  - [Pt(NH<sub>3</sub>)<sub>4</sub>Cl<sub>2</sub>]Br<sub>2</sub> and [Pt(NH<sub>3</sub>)<sub>4</sub>Br<sub>2</sub>]Cl<sub>2</sub> ..... ionization.

Select the correct answer using the codes given below:

- II and III
- I, II and III
- I and III
- I and II

For Answers visit: [www.dharitri.com](http://www.dharitri.com)

















