



Exam Mate



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

FOR ANSWERS VISIT : www.dharitri.com

MOCK TEST PAPER # 3

CLASS-XII (CHEMISTRY)

Time Allowed : 3 hours**Maximum Marks: 70****GENERAL INSTRUCTIONS**

- All questions are compulsory
- Q. No. 1 to 5 are very short answer questions and carry 1 mark each.
- Q. No. 6 to 12 are short answer questions and carry 2 marks each.
- Q No. 13 to 24 are also short answer questions and carry 3 marks each.
- Q. No. 25 to 27 are long answer questions and carry 5 marks each.
- Use log tables if necessary, use of calculators is not allowed.

- Iodine forms I_3^- but F_2 does not F_3^- ions. Why ?
- What is meant by inversion of sugar ?
- Why is sulphuric acid not used during the reaction of alcohols with KI ?
- For the reaction $A + 2B \rightarrow AB_2$, the rate constant is $1.26 \times 10^{-3} \text{ L mol}^{-1}\text{s}^{-1}$. What is the order of the reaction ?
- Name the ionization isomer of $[\text{Cr}(\text{H}_2\text{O})_5\text{Br}]SO_4$.
- Arrange the following carbonyl compounds in increasing order of their reactivity in nucleophilic addition reaction.
Benzaldehyde, *p*-tolualdehyde, *p*-nitrobenzaldehyde, acetophenone.
- What happens when an electric field is applied to a colloidal dispersion ?

OR

- Do the vital functions of body such as digestion get affected during fever ? Explain your answer.
- Alcohols are comparatively more soluble in water than the hydrocarbon of comparable molecular mass ? Explain this fact.
 - State reasons for the following
 - Rusting of iron is said to be an electrochemical phenomenon.
 - For a weak electrolyte, its molar conductance in dilute solution increases sharply as its concentration in solution is decreased.

- a. Why does chlorine water lose its yellow colour on standing ?
- b. What happens when Cl_2 reacts with cold dilute sodium hydroxide ? Write equation only.

- a. What are the products obtained by hydrolysis of lactose ?
- b. Why cannot vitamin C be stored in our body ?

- What do you understand by the terms glycosidic linkage and peptide linkage ?

- Account for the following:
 - CH_3CONH_2 is a weaker base than CH_3CONH_2 is a weaker base than $\text{CH}_3\text{CH}_2\text{NH}_2$.
 - ROH is a stronger acid than RNH_2 .

- While preparing monobromoaniline why is aniline acetylated before reacting it with bromine ? Explain.

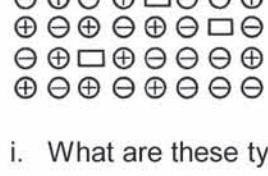
- a. Express the relationship between the rate of production of iodine and the rate of disappearance of hydrogen iodide in the following reaction : $2\text{HI} \rightarrow \text{H}_2 + \text{I}_2$.
- b. The rate of formation of a dimer in a second order dimerisation reaction is $9.1 \times 10^{-6} \text{ mol L}^{-1} \text{ s}^{-1}$ at 0.01 mol L^{-1} monomer concentration. Calculate the rate constant.

- Aluminium crystallizes in a cubic close packed structure. Its metallic radius is 125 pm.

- What is the length of the side of the unit cell ?
- How many unit cells are there in 1.00 cm^3 of aluminium ?

OR

- Examine the illustrations of a portion of a defective crystal given below and answer the following questions.



- What are these type of vacancy defects called ?
- How is the density of a crystal affected by these defects ?
- Name one ionic compound which can show this type of defect in crystalline state.
- How is the stoichiometry of the compound affected ?

- What is an adsorption isotherm ? Describe freundlich isotherm.

- Account for the following

- Bond dissociation energy of F_2 is less than that of Cl_2

- Both NO and ClO_2 are odd electron species but NO dimerises ClO_2 does not.
- Bleaching of flowers by chlorine is permanent while that by sulphur dioxide is temporary.
- Explain why
 - the dipole moment of chlorobenzene is lower than that of cyclohexyl chloride ?
 - alkyl halides, though polar, are immiscible with water ?
 - Grignard's reagents should be prepared under anhydrous conditions ?
- Write the names and molecular structures of the monomers of the following polymers. Give one use of each specifying the property responsible for this use.
 - Glyptal
 - Nylon-6
 - Neoprene
- Give reason for the following:
 - Amino acids have relatively higher melting point as compared to corresponding halo acids.
 - Amino acids are amphoteric in nature.
 - On electrolysis in acidic solution amino acids migrate towards cathode while in alkaline solution these migrate towards anode.
- Show how will you synthesize
 - 1-phenylethanol from a suitable alkene.
 - Cyclohexylmethanol using an alkyl halide by S_N2 reaction.
 - Pentan-1-ol using a suitable alkyl halide.
- a. How is leaching carried out in case of low grade copper ores ?
- b. The value of $\Delta_f G^\circ$ for formation of Cr_2O_3 is -540 kJ mol^{-1} and that of Al_2O_3 is -827 kJ mol^{-1} . Is the reduction of Cr_2O_3 possible with aluminium ?
- Describe the following with suitable examples.
 - Tranquilizers
 - Antifertility drugs
 - Antihistamines
- a. Henry's law constant for CO_2 in water is $1.67 \times 10^8 \text{ Pa}$ at 298 K. Calculate the quantity of CO_2 in 500mL of soda water when packed under 2.5 atm CO_2 pressure at 298 K.
- b. The depression in freezing point of water observed for the same amount of acetic acid, trichloroacetic acid and trifluoroacetic acid increases in the order given above. Explain briefly.

OR

- 0.5 g KCl was dissolved in 100g of water and the solution originally at 20°C , froze at -0.24°C . Calculate the percentage ionization of salt. K_i per 1000g water = 1.86 K
- What role does the molecular interaction play in solution of alcohol and water ?
- Give plausible explanation for each of the following:
 - Cyclohexanone forms cyanohydrin in good yield but 2, 2, 6-trimethylcyclohexanone does not.
 - There are two $-\text{NH}_2$ groups in semicarbazide. However, only one is involved in the formation of semicarbazone.
 - During the preparation of esters from a carboxylic acid and an alcohol in the presence of an acid catalyst, the water or the ester formed should be removed as soon as it is formed.

OR

An organic compound (A) molecular formula $\text{C}_8\text{H}_{16}\text{O}_2$ was hydrolyzed with dilute sulphuric acid to a carboxylic acid (B) and an alcohol (C). Oxidation of (C) with chromic acid produced (B), (C) on dehydration gives but-1-ene. Write equations for the reactions involved.

- The electric configurations of two members of the lanthanoid series are as follows $4f^15d^16s^2$ and $4f^75d^06s^2$. What are their atomic numbers ? Predict the oxidation states exhibited by these elements in their compounds.
- Assign reaction for each of the following statement.
 - The largest number of oxidation states are exhibited by the elements in the middle of the first row of the transition elements.
 - The atomic radii decreases in size with the increasing atomic number in the lanthanoid series.

OR

- Explain giving reasons
 - Transition elements and their compound exhibit paramagnetic behaviour.
 - Transition elements and their compounds are found to be good catalysis.
 - Enthalpies of atomization of the transition elements are high.
- Compare the chemistry of actinoids with that of the lanthanoid in reference to
 - Atomic and ionic sizes
 - Oxidation states.

For Answers visit: www.dharitri.com

ADMISSION TEST ON 13th & 20th JANUARY 2019
(FOR CLASS VII, VIII, IX, X & XI STUDENTS) Ph. No. 0674 - 2421400, 2421800, 85990 87100 / 85990 87200
Preparation For: JEE Mains & Advanced, Medical (NEET / AIIMS), KVPY, Olympiad, NTSE & Board.

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Corporate Office: Vidyamandir Classes, Aggrawal Corporate Heights, 3rd Floor, Plot No. A-7 Netaji Subhash Place, Opposite Wazirpur Depot, Pitampura, Delhi, www.vidyamandir.com

ସଂଖ୍ୟପରେ

୧ ଯୁଦ୍ଧ ଓପାନ ଜିତିବା ପରେ ଏକ କଷ୍ଟସାଧ ମ୍ୟାରରେ ପହୁଅ ଆର ମଧ୍ୟ ବିଜୟ ହାସଳ କରିଥିବାରୁ ଆମ୍ବିଶ୍ଵାସ ବୃଦ୍ଧି ପାଇଛି ।

- ନାନ୍ଦମି ଓସାକା, ଜାପାନର ଝ୍ରାର ଚେନ୍ନିସ ଖେଳାଳି



ଆଘାତଜନିତ ସମସ୍ୟାରେ ଥିବା ଚେନ୍ନିସ କିମ୍ବଦକ୍ତୀ ରାପାଳ ନାତାଳଙ୍କ ଖେଳକୁ ପୁନଃ ପ୍ରତ୍ୟାବର୍ତ୍ତନ ଆମେ ଗାହୁଁ ।

- ନୋଭାକ ଜୋକୋଭିରୁ, ସର୍ବାୟ ଚେନ୍ନିସ ଖେଳାଳି



ପୂଜାରା ୧୩୦*: ଭାରତ ୩୦୩/୪

ବିହାରୀ, ୩୧(ପି.ଟି.)

ବୁଦ୍ଧାନ୍ତର କ୍ରିକେଟ ଗ୍ରାଉଣ୍ଡର ମୁହଁବାର ଆରମ୍ଭ ହୋଇଥିବା ଅନ୍ତର୍ଭାବୀ ବିଜୟ ହାସଳ କରିଥିବାରୁ ଆମ୍ବିଶ୍ଵାସ ବୃଦ୍ଧି ପାଇଛି ।

ମେଣ୍ଟାର୍କିଲ୍ ମୁହଁବାର ପ୍ରତିନିଧି:

କଣ୍ଠେରେ ଚାଲିଥିବା ଏଥାରଟି-

ଟ୍ରେନ୍ ପୁରୁଷ ୪୦ଟି ରାଜୀଙ୍ଗ ଦେଇଛି ।

ମୁନ୍ଦିମେଣ୍ଟ ଭାବର ସିଙ୍ଗାର ପ୍ରମାଣିତ ଅନ୍ତର୍ଭାବ ପାଇଛି ।

ମୁନ୍ଦିମେଣ୍ଟ ଭାବର ପାଇଛି ।

