**BITSAT Chemistry 2010 Sample Paper**

The hybridization state of C atom in butendioic acid is:

|  |
| --- |
|  |
|  | sp^2 |
|  | sp^3 |
|  | both two |
|  | sp |

Which of the following is not a isomer of pentane :

|  |
| --- |
|  |
|  | n-pentane |
|  | 2, 2-dimethy 1 propane |
|  | 2, 3-dimethy 1 butane |
|  | 2-methy 1 butane |

The oxidation number of C atom in  Ch_2CI_2 and  CCI_2 are respectively :

|  |
| --- |
|  |
|  | -2 and – 4 |
|  | 0 and – 4 |
|  | 0 and 4 |
|  | 2 and 4 |

Which of the following dissolves in lonic solvents :

|  |
| --- |
|  |
|  | C_6H_5 |
|  | CH_3OH |
|  | CCL_4 |
|  | C_5H_{12} |

The conjugate acid of HS is :

|  |
| --- |
|  |
|  | S^{-2} |
|  | H_2S_2 |
|  | both two |
|  | none |

Phenolphthalein of pH range [8-10] is used in which of the following type of titration as a suitable indicator :

|  |
| --- |
|  |
|  | NH_4 OH and HCI |
|  | NH_4 OH and HCOOH |
|  | NH_4 OH and  C_2 H_4 O_2 |
|  | NaOH and  C_2 O_4 H_2 |

Which of the following is iron are :

|  |
| --- |
|  |
|  | Malachite |
|  | Hernatite |
|  | Siderite |
|  | Limonite |

The molar concentration of chloride ions in the resulting solution of 300 ml.of 3.0 M NaCI and 200 ml. of 4.0 M Ba  Cl_2 will be :

|  |
| --- |
|  |
|  | 1.7 M |
|  | 1.8 M |
|  | 5.0 M |
|  | 3.5 M |

Which of the following has least bond energy :

|  |
| --- |
|  |
|  | N^{-2}_2 |
|  | N^{-}_2 |
|  | N^{+}_2 |
|  | N_2 |

Which of the following species has highest bond energy :

|  |
| --- |
|  |
|  | O^{-2}_2 |
|  | O^{+}_2 |
|  | O^{-}_2 |
|  | O_2 |

Which of the following compound is not aromatic :

|  |
| --- |
|  |
|  | 1, 3-cyclobutene |
|  | pyridine |
|  | furane |
|  | thiophene |

Which of the following compound is used as refrigerant :

|  |
| --- |
|  |
|  | CCI_2 F_2 |
|  | CCI_4 |
|  | CF_4 |
|  | Acetone |

Which of the following is weak acid :

|  |
| --- |
|  |
|  | C_6 H_6 |
|  | CH_3-C \equiv CH |
|  | CH_2 = CH_2 |
|  | CH_3-C \equiv C-CH_3 |

L.P.G. mainly consist of the following :

|  |
| --- |
|  |
|  | Methane |
|  | Hydrogen |
|  | Acetylene |
|  | Butane |

The solubility product of  CaCo_3 is  5 \times 10^{-9} . The solubility will be :

|  |
| --- |
|  |
|  | 2.5 \times 10^{-5} |
|  | 7 \times 10^{-5} |
|  | 2.5 \times 10^{-4} |
|  | 2.2 \times 10^{-9} |

The outer electronic configuration of alkali earth metals is :

|  |
| --- |
|  |
|  | nd^{10} |
|  | ns^1 |
|  | np^6 |
|  | ns_2 |

The nature of 2, 4, 6-trinitrophenol is :

|  |
| --- |
|  |
|  | Neutral |
|  | Basic |
|  | Acidic |
|  | Weak basic |

Which of the following group is sharp ortho and pa ra directive :

|  |
| --- |
|  |
|  | -C_6 H_5 |
|  | -OH |
|  | -CH_3 |
|  | –CI |

By which of the following process hydrocarbons are found from petroleum :

|  |
| --- |
|  |
|  | combustion |
|  | fractional distillation |
|  | addition |
|  | all above |

A sample of petroleum contains 30% n-heptane, 10% 2-methyl hexane and 60% 2, 2, 4-trimethyl pentane, the octane no. of this sample will be :

|  |
| --- |
|  |
|  | 30% |
|  | 60% |
|  | 10% |
|  | 70% |

In which of the following halogens p-electrons does not take part in resonance :

|  |
| --- |
|  |
|  | CH_2 = CH - CH_2C1 |
|  | BrC_6 H_5 |
|  | C_6 H_5 C1 |
|  | CH_2 = CHC1 |

Which of the following statement is false :

|  |
| --- |
|  |
|  | 40% solution HCHO is known as formalin |
|  | HCHO is least reactive in its homologous series |
|  | The B.P. of isovarelaldehyde is less than n-varelaldehyde |
|  | The boiling point of ketones are higher than that of aldehydes |

If n +  \mu = 8 then the expected no. of orbitals will be :

|  |
| --- |
|  |
|  | 4 |
|  | 9 |
|  | 16 |
|  | 25 |

http://s3.amazonaws.com/jumbotests.com/assets/3541/image.JPG?1312626800here the compound C will be :

|  |
| --- |
|  |
|  | Lewsite |
|  | Westron |
|  | Acetylene tetra chloride |
|  | Both 2 and 3 |

Which of the following is least hydrolysed :

|  |
| --- |
|  |
|  | BeC1_2 |
|  | MgC1_2 |
|  | CaC1_2 |
|  | Bac1_2 |

The laughing gas is :

|  |
| --- |
|  |
|  | N_2 O_4 |
|  | NO |
|  | N_2O |
|  | N_2 O_5 |

The hydrogen ion concentration of a solution is  3.98 x 10^{-6} mole per liter. The pH value of this solution will be :

|  |
| --- |
|  |
|  | 6.0 |
|  | 5.8 |
|  | 5.4 |
|  | 5.9 |

The reaction of sodium acetate and sodalime gives :

|  |
| --- |
|  |
|  | Butane |
|  | Ethane |
|  | Methane |
|  | Propane |

Which of the following acids does not contain – COOH group :

|  |
| --- |
|  |
|  | Carbamic acid |
|  | Barbituric acid |
|  | Lactic acid |
|  | succinnic acid |

Which of the following compound of xenone does not exists :

|  |
| --- |
|  |
|  | XeF_6 |
|  | XeF_4 |
|  | XeF_5 |
|  | XeF_2 |

 FeSO_4,  7H_2 O is :

|  |
| --- |
|  |
|  | Mohr’s salt |
|  | Blue vitriol |
|  | Green vitriol |
|  | White vitriol |

The solution of BiCl3 in dil. HCI when diluted with water white precipitate is formed which is :

|  |
| --- |
|  |
|  | Bismith oxychloride |
|  | Bismith oxide |
|  | Bismith hydroxide |
|  | none of these |

The strongest acid is :

|  |
| --- |
|  |
|  | acetic acid |
|  | trichloroacetic acid |
|  | dichloracetic acid |
|  | monochloroacetic acid |

The false statement regarding alkane is :

|  |
| --- |
|  |
|  | This does not perform polymerization reaction |
|  | This does not gives elimination reaction |
|  | It does not disappear the colour of dilute KMnO\_4 solution |
|  | It does not decolourise bromine water |

Which of the following is strongest base :

|  |
| --- |
|  |
|  | C_6 H_5 NH_2 |
|  | CH_3 NH_2 |
|  | NH_3 |
|  | CH_3 CONH_2 |

Which of the following aromatic compound gives sulphonation reaction very easily :

|  |
| --- |
|  |
|  | Chlorobenzene |
|  | Nitrobenzene |
|  | Toluene |
|  | benzene |

The geometry of I3- is :

|  |
| --- |
|  |
|  | Triangular |
|  | Linear |
|  | Tetrahedral |
|  | T-shape |

The half life of a radio active element is 140 days. 1 gm. of this element after 560 days will become :

|  |
| --- |
|  |
|  | \cfrac{1}{16} \ gm |
|  | \cfrac{1}{4} \ gm |
|  | \cfrac{1}{8} \ gm. |
|  | \cfrac{1}{2} \ gm. |

The volume concentration of hydrogen peroxide 6.8% concentration will be :

|  |
| --- |
|  |
|  | 5 |
|  | 11.2 |
|  | 22.4 |
|  | 20 |

Which of the following on combustion give maximum energy :

|  |
| --- |
|  |
|  | Ethane |
|  | Propane |
|  | Methane |
|  | Butane |

C6H6 + CH3CI  \xrightarrow{Anhy. \ AICI_3} C6H5CH3 + HCI The name of above reaction is :

|  |
| --- |
|  |
|  | Gattermann |
|  | Reimer-tiemann |
|  | Friedel-Craft |
|  | Cannizaro |

The oxidation state of Cr in  K_2Cr_2O_7 is :

|  |
| --- |
|  |
|  | +4 |
|  | +3 |
|  | +6 |
|  | +5 |

The natural rubber is the polymer of :

|  |
| --- |
|  |
|  | 1, 3- butadiene |
|  | polyamide |
|  | isoprene |
|  | none of these |

Nylone-66 is a :

|  |
| --- |
|  |
|  | polyester |
|  | polyamide |
|  | polyacrylate |
|  | none of these |

2NO(g) +  CI_2 \ (g)  \underleftarrow{\rightarrow}  \underleftarrow{2} NOCI The equilibrium constant for this reaction is :

|  |
| --- |
|  |
|  | K_c = \cfrac{[NOCI]^2}{[NO^2][CI_2]^2} |
|  | K_c = \cfrac{[NOCI]^2}{[2NO^2][CI_2]} |
|  | K_c = \cfrac{[NOCI]^2}{[NO^2][CI^2]} |
|  | K_c = \cfrac{[2NOCI]}{[2NO][CI]} |

 C_6H_6 + CO + HCI  \xrightarrow{A}  C_6H_5CHO + HCI here A is :

|  |
| --- |
|  |
|  | anhydrans ZnO |
|  | V_2O_5/450^\circ \ C |
|  | anhydrous  AICO_3 |
|  | solid KOH |

The values of for HCN and  CH_3 COOH are 7.2 x  10^{-10} and 1.75 x  10^{-5} (at  25^\circ C) respectively. The strongest acid amongst them is :

|  |
| --- |
|  |
|  | CH_3 \  COOH |
|  | HCN |
|  | both |
|  | none of these |

In which of the following carbon atom (asterisk) is asymmetric :

|  |
| --- |
|  |
|  | CH_3 CH_2CH \ (CH_3) \ CH_2OH |
|  | CH_3 CH_2CH \ (CH_3) \ CHOH |
|  | CH_3 CH_2CH_2 CH_2CH_2OH |
|  | CH_3 CH_2CH \ (CH_3) CH_2OH |

Benzene reacts with  CH_3COCIin presence of Lewis acid  AICI_3 to form :

|  |
| --- |
|  |
|  | Acetophenone |
|  | Toluene |
|  | Benzyl Chloride |
|  | Chlorobenzene |

Which of the following is reducing agent :

|  |
| --- |
|  |
|  | H_2S |
|  | HNO_3 |
|  | H_2O |
|  | K_2Cr_2O_7 |

In which of the following alkyl chloride the possibility of  SN_1 reaction mechanism is maximum :

|  |
| --- |
|  |
|  | (CH_3)_2CHCI |
|  | (CH_3)_3C-CI |
|  | CH_3CI |
|  | CH_3CH_2CI |

The energy produced realated to mass decay of 0.02 amu is :

|  |
| --- |
|  |
|  | 28.2 MeV |
|  | 931 MeV |
|  | 18.62 MeV |
|  | none of these |

The mole of hydrogen ion in 50 ml. of 0.1 M HCI solution will be :

|  |
| --- |
|  |
|  | 5 \ x \ 10^2 |
|  | 5 \ x \ 10^{-3} |
|  | 5 \ x \ 10^3 |
|  | 5 \ x \ 10^{-2} |

Petroleum is mainly consist of :

|  |
| --- |
|  |
|  | Aliphatic alcohol |
|  | Aromatic hydrocarbon |
|  | Alipnetic hydrocarbon |
|  | None of these |

 C_6H_6OCH_3 \ + \ HI  \xrightarrow{\Delta\Delta} …….. + ……….. The products in the above reaction will be :

|  |
| --- |
|  |
|  | C_6H_5I+CH_3OH |
|  | C_6H_5CH_3+HOI |
|  | C_6H_5OH+CH_3I |
|  | C_6H_6+CH_3OI |

F3 is :

|  |
| --- |
|  |
|  | Bronsted base |
|  | Lewis base |
|  | Lewis acid |
|  | Bronsted acid |

Which of the following compound gives violet colour with  FeCI_3 solution:

|  |
| --- |
|  |
|  | Benzaldehyde |
|  | Aniline |
|  | Nitrobenzene |
|  | Phenol |

Hypo solution forms which of the following complex compound with AgCI :

|  |
| --- |
|  |
|  | Na_5[Ag(S_2O_3)_3] |
|  | Na_3[Ag(S_2O_3)_2] |
|  | Na_2[Ag(S_2O_3)_2] |
|  | Na_3[Ag(S_2O_3)_3] |

Molecular oxygen is :

|  |
| --- |
|  |
|  | ferro magnetic |
|  | diamagnetic |
|  | para magnetic |
|  | non magnetic |

Bonds in acetylene are :

|  |
| --- |
|  |
|  | 2 \pi \ bonds |
|  | one \ \pi \ bond |
|  | 3 \pi \ bonds |
|  | none of these |

The false statement for Griynaed reagent is :

|  |
| --- |
|  |
|  | It gives tertiary alcohol with acetamide |
|  | It gives tertiary alcohol with acetone |
|  | It gives secondary alcohol with acetaldehyde |
|  | It gives primary alcohol with formaldehyde |

Which of the following alkane exists is liquid state at normal temperature :

|  |
| --- |
|  |
|  | C_{20}H_{42} |
|  | C_3H_8 |
|  | C_8H_{18} |
|  | CH_4 |

The solubility of AgCI at  25^\circ C will be maximum in :

|  |
| --- |
|  |
|  | Potassium chloride solution |
|  | AgNo_3 \ solution |
|  | Water |
|  | All above |

The weight of a benzene molecule is :

|  |
| --- |
|  |
|  | 78 gm. |
|  | 7.8 gm. |
|  | 13 \ x \ 10^{-23} |
|  | none of these |

 CuFeS_2 is :

|  |
| --- |
|  |
|  | iorn pyrites |
|  | malachite |
|  | chalcosite |
|  | chalcopyrites |

Primary halides follow the following reaction mechanism :

|  |
| --- |
|  |
|  | SN_1 |
|  | SN_2 |
|  | both |
|  | none of these |

C and Si belong to the same group of periodic table,  CO_2 is a gas and  SiO_2 is a :

|  |
| --- |
|  |
|  | liquid |
|  | gas |
|  | solid |
|  | none of these |

 H_2S is a gas while  H_2O is a liquid because :

|  |
| --- |
|  |
|  | there is association due to hydrogen bonding |
|  | bond energy of OH high |
|  | the ionization potential of oxygen is high |
|  | the electro negativity of oxygen is high |

“The negative part of the molecule adding to the double bond goes to that unsaturated asymmetric carbon atom which is linked to the least number of hydrogen atoms.” This statement is related to :

|  |
| --- |
|  |
|  | Markownikoff’s law |
|  | Peroxide effect |
|  | Bayer’s law of distortion |
|  | none of these |

The conjugate base of NH3 is :

|  |
| --- |
|  |
|  | N_2H_4 |
|  | NH_2^- |
|  | NH_4^+ |
|  | NH_2^+ |

 N_2 and (b)  C_2H_2. The nos. of  \pi and  \sigma bond in the molecules are respectively :

|  |
| --- |
|  |
|  | (a) 2,2 (b) 2,2 |
|  | (a) 1,2 (b) 2,1 |
|  | (a) 2,1 (b) 2,3 |
|  | (a) 2,1 (b) 2,1 |

In which of the following compound there are maximum no. of  sp^2 hybrid C atoms:

|  |
| --- |
|  |
|  | Benzene |
|  | 1,3,5-hexatriene |
|  | 1,2,4-hexatriene |
|  | both 1 and 2 |

The shape of the molecule having hybrid orbitals of 20% character will be :

|  |
| --- |
|  |
|  | octahedral |
|  | tetrahedral |
|  | square planer |
|  | triangular bipyramidal |

The pH of a solution is 5. If the dilution of this solution is increased by 100 times, the pH value will be :

|  |
| --- |
|  |
|  | 5 |
|  | 7 |
|  | 9 |
|  | 8 |

The required amount of oxygen for combustion of 20 ml. of gaseous hydrocarbon is 50 ml. The hydrocarbon will be :

|  |
| --- |
|  |
|  | C_2H_2 |
|  | C_2H_4 |
|  | C_2H_6 |
|  | C_3H_4 |

The formula of Celestine is :

|  |
| --- |
|  |
|  | SrSO_4 |
|  | SrCO_3 |
|  | SrO |
|  | SrC1_2 |

 CuCl_2 +  \rightarrow Cu +  CI_2. The required amount of electricity for this reaction is :

|  |
| --- |
|  |
|  | 4 faraday |
|  | 2 faraday |
|  | 1 faraday |
|  | 3 faraday |

Nitrogen does not forms  NF_5 because :

|  |
| --- |
|  |
|  | The bondenergy of  N \equiv N is very high |
|  | Vaccent d-orbitals are not present |
|  | N belongs to V group |
|  | There is inert effect |

The normal temperature when raised by  10^\circ C, the rate of reaction will be :

|  |
| --- |
|  |
|  | lowered by 2 times |
|  | increased by 2 times |
|  | lowered by 10 times |
|  | increased by 10 times |

Which of the following gives red precipitate with ammonical cuprous chloride :

|  |
| --- |
|  |
|  | Propane |
|  | Ethane |
|  | Methane |
|  | Acetylene |

 [Cu(NH_3)_4]^{2+} snows the following hybridization :

|  |
| --- |
|  |
|  | dsp^2 |
|  | sp^3d |
|  | dsp^3 |
|  | sp^3 |

A solution contains CI-,  I^- and  S \ O_4^{3-} ions in it. Which of the following ion is capable to precipitate all of above when added in this solution :

|  |
| --- |
|  |
|  | Pb^{2+} |
|  | Ba^{2+} |
|  | Hg^{2+} |
|  | Cu^{2+} |

Fool’s gold is :

|  |
| --- |
|  |
|  | Cu_2S |
|  | FeS_2 |
|  | A1_2O_5 |
|  | CuFeS_2 |

In which of the following compound the central atom is in  sp^2 hybrid state :

|  |
| --- |
|  |
|  | OF_2 |
|  | HgC1_2 |
|  | XeF_2 |
|  | NH_2^+ |

The number of alkenyl groups possible from  C_4H_7^- are :

|  |
| --- |
|  |
|  | 7 |
|  | 5 |
|  | 3 |
|  | 8 |

The tetraethyl lead mixed in petrol is works as :

|  |
| --- |
|  |
|  | Cooling agent |
|  | Anti knocking agent |
|  | Bleaching agent |
|  | None of these |

The alkaline hydrolysis of ester is known as :

|  |
| --- |
|  |
|  | dehydrogenation |
|  | dehydration |
|  | esterification |
|  | saponification |

The degree of ionization of 0.4 M acetic acid will be :  (K_a = 1.8 \times 10^{-5}) 

|  |
| --- |
|  |
|  | 6.71\times 10^{-3} |
|  | 1.6 \times 10^{-3} |
|  | 0.4\times1.8x10^{-5} |
|  | 1.8\times10^{-5} |

Haber process is used for production of which of the following :

|  |
| --- |
|  |
|  | NH_3 |
|  | HNO_3 |
|  | H_2SO_4 |
|  | O_3 |

The  p_{ka} value of phenolphthalein is 9.1 and the pH range is 8-10. In which of the following titrations it can be used as an indicator :

|  |
| --- |
|  |
|  | NH_4OHand HCI |
|  | NH_4OH and  HCI_3COOH |
|  | NaOH and HCI |
|  | NH_4OH |

Number of electrons in a one molecule of  CO_2 :

|  |
| --- |
|  |
|  | pb^{2+} |
|  | Hg^{2+} |
|  | Ba^{2+} |
|  | Cu^{2+} |

Which of the following species shows the maximum magnetic moment :

|  |
| --- |
|  |
|  | Mn^{+6} |
|  | Ni^{2+} |
|  | Fe^{3 +} |
|  | Ag^+ |

 K_{sp} value of  CaF_2 is  3.75 \times 10^{11} The solubility will be :

|  |
| --- |
|  |
|  | 1.45 \times 10^{-11}  mol/litre^{-1} |
|  | 3.45 \times 10^{-4}  mol/litre^{-1} |
|  | 2.05 \times 10^{-4}  mol/litre^{-1} |
|  | 3.75 \times \ 10^{-11}  mol/litre^{-1} |

When  Pb_3O_4 is heated with dilute  H \  N \ O_3 it gives :

|  |
| --- |
|  |
|  | pbO_2 and  pb(NO_3)_2 |
|  | pbO and  pb(NO_3)_2 |
|  | pbO_2 |
|  | pbO |

C-H bond length is least in :

|  |
| --- |
|  |
|  | Acetylene |
|  | Methane |
|  | Ethylene |
|  | Ethane |

The minimum nos. of carbon atoms in ketones which will show chain isomerism will be :

|  |
| --- |
|  |
|  | Seven |
|  | four |
|  | six |
|  | five |

Which of the following organic compound could not be dried by anhydrous  CaCI_2 :

|  |
| --- |
|  |
|  | ethanol |
|  | benzene |
|  | chloroform |
|  | ethyl acetate |

Which of the following compound forms white precipitate with bromine water :

|  |
| --- |
|  |
|  | Nitrobenzene |
|  | Phenol |
|  | Benzene |
|  | all above |

Gypsum is :

|  |
| --- |
|  |
|  | CaSO_4.H_2O |
|  | CaSO_4. \ 2H_2O |
|  | 2CaSO_4. \ 2H_2O |
|  | CaSO_4 |

Which of the following carbonium ion is most stable :

|  |
| --- |
|  |
|  | CH_3-C\cfrac{+} \ CH_3 |
|  | CH_3 \overset{+}{CH_2} |
|  | \overset{CH_3}{\underset{CH_30CH-CH_3}{+}} |
|  | \underset{CH_3}{\overset{+}} |