



CHEMISTRY

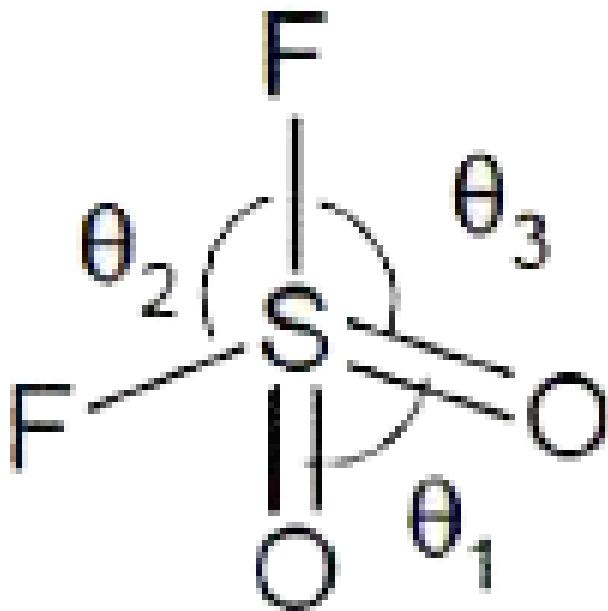
BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 30

Chemistry Single Choice

1. Which one of the following

Statements is correct for



A. It contains $P\pi - P\pi$ and

$p\pi - d\pi$ bond

B. It has regular tetrahedral

geometry

C. $\theta_1 > \theta_3$

D. It has a plane which contains

maximum number of atoms i.e., 4 atoms

Answer: C

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2. Consider oxides given below :



Select the oxides that are

acidic.

A. CrO_3 , Mn_2O_7 and SO_2

B. only SO_2

C. only Mn_2O_7 and SO_2

D. CO and SO_2

Answer: A



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3. Hybridization of each carbon in

C_3O_2 is

A. sp

B. sp^2

C. sp^3

D. sp^2d

Answer: A



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4. Which of the following involve froth flotation processes ?

(I) Extraction of silver from argentite

(II) Extraction of iron from haematite

(III) Extraction of Cu from chalcopynite

(IV) Extraction of Al from bauxite

A. III to IV

B. II and IV

C. II and III

D. I and III

Answer: D



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5. In which of the following reactions, hydrogen will not be liberated ?

A. Allowing a solution of sodium in

liquid

ammonia to stand.

B. Reaction of zinc with aqueous alkali.

C. Reaction of lithium hydride with B_2H_6

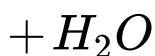
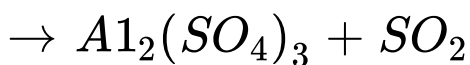
D. Electrolysis of acidified water using Pt electrodes.

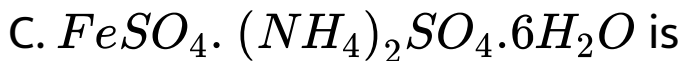
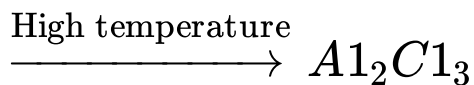
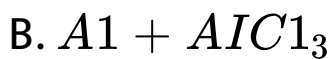
Answer: C



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6. which one of the following statements is correct ? (please ignore the balancing wherever is applicable)





called Mohr's salt



Answer: C



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7. Prussian blue is a deep blue pigment containing Fe^{2+} , Fe^{3+} and CN^- ions. It has the formula $Fe_7(CN_2)_8$. How many Fe^{2+} and Fe^{3+} ions are there per formula unit ?



Answer: A



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8. Incorrect statement about brown-ring complex is :

A. The SFL is in + 1 O.S. with a

bond order of 3

B. CMI is in + 1 O.S. with

magnetic moment of $\approx 3.9 \text{ BM}$

C. Freshly prepared $Fe_2(SO_4)_3$

solution is used for detection

D. Unstable ring is formed at the junction of the two liquids which on shaking gets converted into brown color solution.

Answer: C



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9. A doctor by mistake administered a $\text{Ba}(\text{NO}_3)_2$ solution to a patient for radiography investigation.

Which of the following should be given as best to prevent the absorption of soluble barium ?

A. NaCl

B. Na_2SO_4

C. NaClO_4

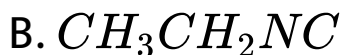
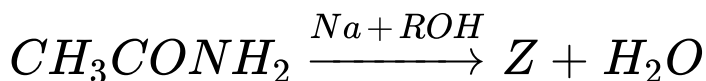
D. NH_4Cl

Answer: B



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10. From the given reaction, what is product Z ?



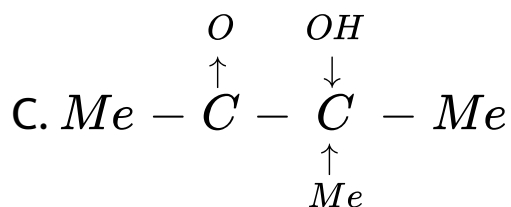
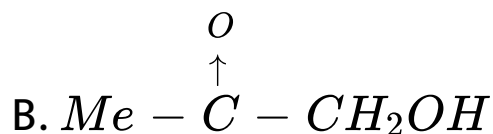
Answer: A



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11. Which will give silver mirror test

with Tollen's reagent ?



D. All of these

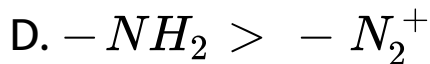
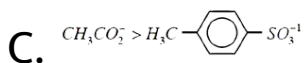
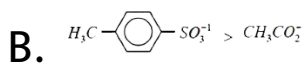
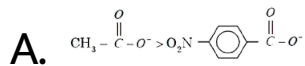
Answer: B



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12. Correct order of leaving group

ability for S_N2 reaction is :

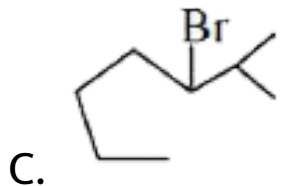
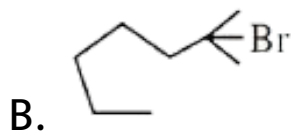
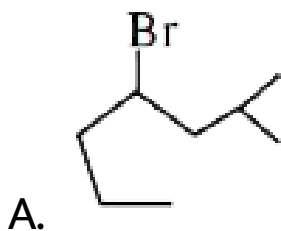
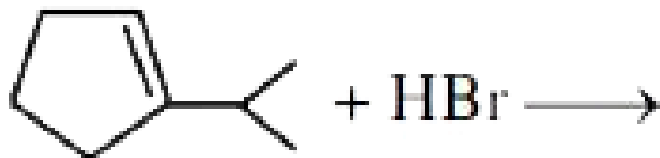


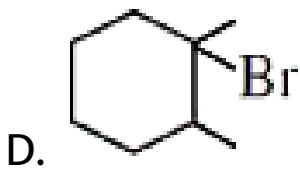
Answer: B



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13. Which of the following major product is formed in the following reaction ?





Answer: D

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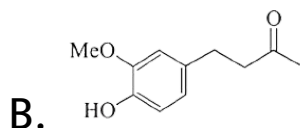
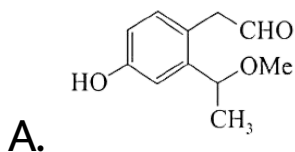
14. Zingerone having molecular

formula $C_{11}H_{14}O_3$ is

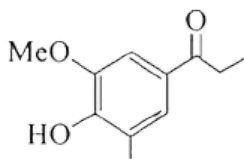
constituent of ginger. It give following test.

Reagent	Reagent
Neutral FeCl_3	Voilet colouration
2, 4D. N. P.	Yellow orange colouration
NaOI	Yellow ppt

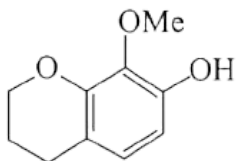
Zingerone on bromination with bromine water produces mono brominated product. Structure of Zingerone will be ?



C.



D.



Answer: B



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15. Which of the following has an addition polymer ?

A. Teflon

B. Nylon-6,6

C. Terylene

D. Bakelite

Answer: A



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16. Considering Ellingham diagram.

which of the following metals can

be used to reduce alumina ?

A. Mg

B. Zn

C. Fe

D. Cu

Answer: A



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17. Which type of crystal systems
(of the following) have all their
interfacial angles right angle?

A. Triclinic

B. Monoclinic

C. Orthorhombic

D. Hexagonal

Answer: C



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18. A mercury tube of length

100 cm. open at one end is kept

vertically with open end upwards. It

is filled with 10 cm of mercury to trap an air column of height 40 cm. what will be the length of trapped air if it is held vertically with open end downwards ?

[Assume atmospheric pressure to be 1 atm]

A. 40.00 cm

B. 32.00 cm

C. 52.12 cm

D. 82.00 cm

Answer: C



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19. Number of orbital (S) in zinc having at least one angular node :

A. 11

B. 7

C. 6

D. 5

Answer: A



20. Which one of the following is incorrect for chemisorption ?

A. Heat of adsorption is negative

B. It takes place at high temperature

C. It is reversible

D. It is highly specific in nature.

Answer: C



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Chemistry Subjective Numerical

1. The CFSE for $[CoCl_6]^{4-}$ complex

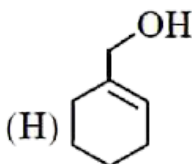
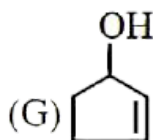
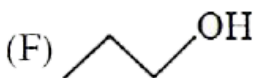
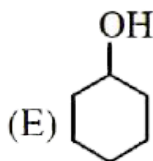
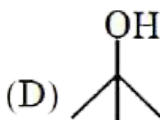
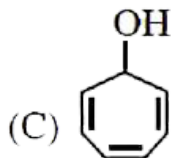
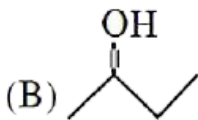
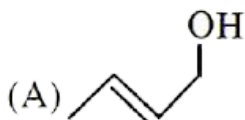
is 18000 cm^{-1} . The Δ for

$[CoCl_4]^{2-}$ will be :



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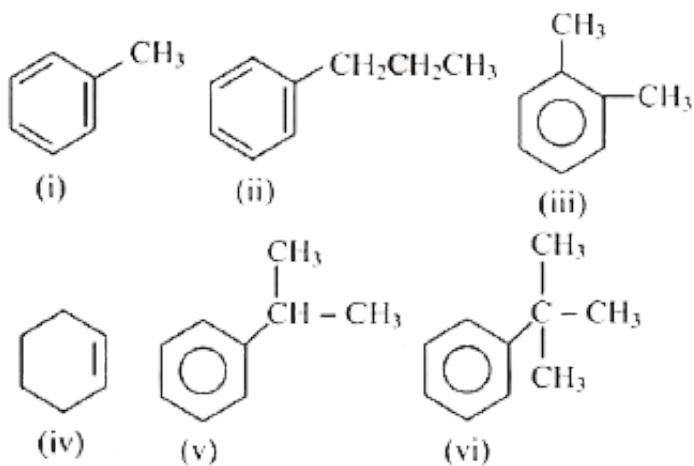
2. How many alcohols give immediate turbidity on heating with Luca's Reagent ?



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3. How many of the following compounds will give Benzoic acid on treating with acidic $KMnO_4$

$KMnO_4$



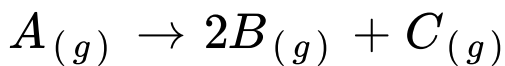
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4. If total number of chiral centre in α -D-Glucopyranose is 'P' and sucrose is 'Q' then what would be value of $(P \times Q)$?



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5. Given gaseous decomposition of A follows first order kinetics. Pure A (g) is taken in a sealed flask where decomposition occurs as.



a leak was developed in the flask

after 10 sec, and the leaking

gaseous mixture obeys Graham's

law. On analysis of the effused

gaseous mixture coming out

initially, moles of B(g) were found

to be double of A Calculate rate

constant in sec^{-1}

Given that Molecular weight of A = 16

Molecular weight of B = 4 Molecular weight of

C = 8 [$\ln 3 = 1.1$, $\ln 2 = 0.7$]

write your answer by multiplying it with 100.



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6. How many number of faradays of electricity are required for three liters of 0.5 M $K_2Cr_2O_7$

Solution to completely reduced in the acidic medium ?



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7. 100 ml of 50 mol m^{-3}

Ba (OH_2), (aq.) solution is

mixed with 400 ml 50 mol m^{-3}

HX (aq.) solution . Given :

pK_a (HX)=4. Find final pH of solution



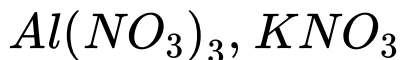
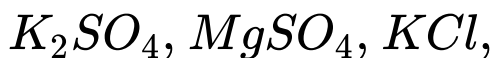
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8. Assuming complete

dissociation, count the correct

solutions from the following

which will have the value of
van't Hoff's factor (i) equal to
2 in their aqueous solutions.



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9. One compound contains only

C, H, O and Cu.

In the analysis for

Cu^{2+} , a 0.115 g sample of the compound is reacted with concentrated nitric acid, evaporated to dryness and the residue is dissolved in H_2O . In the resulting solution the Cu^{2+} is reacted with excess I^- and the resulting iodine is titrated with 0.0320 M $S_2O_3^{2-}$, requiring 11.75 mL.

The combustion of a 0.250 g sample of the compound produces 0.504 g of CO_2 and

0.0743 g of H_2O

What is the number of oxygen

atoms per copper atom ? (At. Mass of Cu=63.5

g mol⁻¹)



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10. Calculate the number of

extensive properties among the

following :

Mass, volume, density, internal

energy, specific volume,

temperature, enthalpy, heat

capacity, entropy, surface

tension



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