CHM102
The default category for questions shared in context 'CHM102'.
Fill in the Blank (FBQs)
FBQ1
The use of _____ as octane number enhancer is being curtailed for environmental reasons.

Tetraethyl lead
1.0000000

0.0000000

0.0000000
FBQ2
In _____ , fuel having a lower octane number is much more useful than those having a higher octane number.

diesel engine
1.0000000

0.0000000
FBQ3
Quality of diesel fuel is expressed in terms of a parameter called _____

Cetane number
1.0000000

0.0000000
FBQ4
Good quality diesel fuel required for modern diesel engine has cetane number greater than _____

45
1.0000000
Forty five
1.0000000

0.0000000
FBQ5
Boiling point of a covalent substance depends upon the _____ forces.

intermolecular
1.0000000

0.0000000
FBQ6
It has been found that molecules with odd number of carbon atoms have lower melting point than those with an even number of carbon atoms. True or false?

true
1.0000000

0.0000000
FBQ7
The _____ in a carbon chain with an odd number of carbon atoms lies on the same side whereas those in a carbon chain with an even number lie on the opposite side.

Terminal carbon atoms
1.0000000

0.0000000
FBQ8
All alkanes are lighter than water. True or false?

true
1.0000000

0.0000000
FBQ9
Alkanes are soluble in polar solvents but insoluble in nonpolar solvents. True or false?

false
1.0000000

0.0000000

0.0000000
FBQ10
UV spectroscopy is of important in the characteristic of alkanes. True or false?

false
1.0000000

0.0000000
FBQ11
The joining of the two alkyl groups from two molecules of alkyl halide with the lost of halogen occur in which method of preparation of alkanes. _____

wurtz
1.0000000

0.0000000

0.0000000
FBQ12
Preparation of alkanes from carboxylic acid is achieved by _____ method.

Kolbe's electrolytic
1.0000000

0.0000000
FBQ13
Alkanes or cycloalkanes can be prepared by _____ of unsaturated hydrocarbons using platinum and palladium as a catalyst.

hydrogenation
1.0000000

0.0000000
FBQ14
In Sabatier senderen's reaction method, the hydrogenation of alkanes takes place in the presence of _____ catalyst.

Nickel
1.0000000
Ni
1.0000000
FBQ15
Alkyl magnesium halide is also called _____

Grignard reagent
1.0000000

0.0000000

FBQ16
In decarboxylation of carboxylic acid, the alkanes produced contain one carbon atom less than the original acid. True or false.

true
1.0000000

0.0000000
FBQ17
Cyclopentanone is prepared from which salt _____

barium adipate
1.0000000

0.0000000
FBQ18
When an alkene reacts with borane, addition to the carbon-carbon double bond takes place to yield an _____

organoborane
1.0000000

0.0000000

0.0000000
FBQ19
_____ can also be carried out by reacting ethyne and Grignard reagent, followed by the action of an alkyl halide.

Alkylation
1.0000000

0.0000000
FBQ20
The common name for 1,3,5-trimethylbenzene is _____

Mesitylene
1.0000000

0.0000000

0.0000000
FBQ21
Alkanes undergo manly _____ reaction, which can be explained using free radical chain mechanism.

substitution
1.0000000

0.0000000

0.0000000
FBQ22
The chemical reactions which take place in the presence of light are called _____ reactions

Photochemical
1.0000000

0.0000000
FBQ23
Halogenation of alkanes does not occur in the dark but in the presence of _____ light.

UV
1.0000000

0.0000000

0.0000000
FBQ24
In the chain initiation step of halogenation of alkanes, the halogen molecule undergoes _____ forming free radicals

homolysis
1.0000000

0.0000000
FBQ25
In the second step of halogenation of alkanes, the halogen molecule abstract a hydrogen atom from the alkane molecule thereby producing an _____

alkyl radical
1.0000000

0.0000000
FBQ26
Alkenes can be classified on the basis of the number of _____ present in the molecules

double bonds
1.0000000

0.0000000

0.0000000
FBQ27
Hydrocarbons containing two double bonds are called _____

diolefins
1.0000000
Alkadienes
1.0000000
Dienes
1.0000000
FBQ28
In the allene molecule the central carbon atom is sp hybridized while the terminal carbon atom is _____

sp2 hybridized
1.0000000

0.0000000

0.0000000
FBQ29
An alcohol is converted to alkene by _____

dehydration
1.0000000

0.0000000
FBQ30
In wittig reaction alkenes are synthesize from _____ compounds

carbonyl

1.0000000

0.0000000
FBQ31
Alkenes are readily hydroxylated form a dihydroxy compound known as _____

glycols
1.0000000
diol
1.0000000
FBQ32
A reaction in which the double bond is completely broken and alkene molecule is converted into two smaller molecules is called _____

ozonolysis
1.0000000

0.0000000
FBQ33
Alkynes are divided into two, namely _____

Terminal and internal alkynes
1.0000000

0.0000000

0.0000000
FBQ34
A catalyst mixed with a selective inhibiting agent is called a _____

Poisoned catalyst
1.0000000

0.0000000
FBQ35
_____ is given a cetane number 100

Hexadecane
1.0000000
C16H34
1.0000000
Multiple Choice Questions (MCQs)
MCQ1
In covalent bonding the formation of the bonds is usually accompanied by?

Absorption of energy

0.0000000
Dissociation of bond

0.0000000
Release of energy

1.0000000
Formation of low stable molecules

0.0000000
MCQ2
The structure which shows how various atoms are connected to each other is called?

Fischer structure

0.0000000

Lewis structure

1.0000000
Condense structure

0.0000000
spatial structure

0.0000000
MCQ3
The formula CH3CH3 represents the ____for ethane.

Spatial structure

0.0000000
Lewis structure

0.0000000
Condense structure

1.0000000
None of the options

0.0000000
MCQ4
Give the name of this compound. CH3 (CH2)6CH3.

Hexane

0.0000000
Propane

0.0000000
Butane

0.0000000
Octane

1.0000000
MCQ5
The condense formula for ethane is CH3CH3 while that of ethylene is?

CH2CH2

0.0000000
CHCH3

0.0000000
HC=CH

0.0000000
H2C=CH2

1.0000000
MCQ6
When molecules are formed it can be deduced that?

There was sharing of electron pair between atoms.

0.0000000
There was donation of electrons by one atom to another.

0.0000000
There was a molecular orbital interaction

0.0000000
All of the options.

1.0000000
MCQ7
The new orbitals formed in carbon and later interact with the orbitals of hydrogen to form?

Interacting orbitals

0.0000000
Hybrid orbitals

1.0000000
2S and three 2P orbitals

0.0000000
Promoted orbitals

0.0000000
MCQ8
The symbol SP3 hybrid simply means

One S and three P orbitals interaction

1.0000000
25 % S and 75 % P orbitals

0.0000000
Three S and one P orbitals

0.0000000
All of the options

0.0000000
MCQ9
What type of hybridization is peculiar to ethylene?

SP3 hybridization

0.0000000
2SP3 hybridization

0.0000000
2SP2 hybridization

0.0000000
SP2 hybridization

1.0000000
MCQ10
SP3 hybrid orbitals are stronger and stable compare to the bonds formed by using pure atomic orbitals because____

SP3 hybrid orbitals have two lobes of unequal sizes.

0.0000000
SP3 hybrid orbitals are similar to p orbitals.

0.0000000
The lobes in SP3 hybrid orbitals are separated by anode.

0.0000000

In SP3 hybrid orbital, the electron density is concentrated in one direction leading to greater overlap.

1.0000000
MCQ11
What is the bond angle between two SP3 hybrid orbitals?

47.5o

0.0000000
18.5o

0.0000000
109.5o

1.0000000
107o

0.0000000
MCQ12
What is the name of the bond formed between carbon and hydrogen (C-H)?

C-H Bond

0.0000000
a(alpha)bond

0.0000000
Sigma bond

1.0000000
p(pi) bond

0.0000000
MCQ13
What is the measure of the length of C-C bond?

164 pm

0.0000000
164 cm

0.0000000
154 cm

0.0000000
154 pm

1.0000000
MCQ14
The number of hybrid orbitals generated is equal to the number of__ orbitals combined.

atomic

1.0000000
molecular

0.0000000
ionic

0.0000000
electronic

0.0000000
MCQ15
Grouping organic compounds base on their functional groups makes it easier to understand their___

Physical and chemical properties

0.0000000
Physical properties only

0.0000000
Chemical properties only

1.0000000
Structural properties only

0.0000000
MCQ16
What is the functional group of aldehyde?

C-C=O

0.0000000
RCHO

0.5000000
-CHO

1.0000000
-COO-

0.0000000
MCQ17
A functional group can be defined as?

An atom in a molecule which exhibit a characteristic chemical properties

0.0000000
A group of atoms in a molecule which exhibit a characteristic chemical properties

0.0000000
An atom or group of atoms in a molecule which exhibit a characteristic physical properties

0.0000000
An atom or group of atoms in a molecule which exhibit a characteristic chemical properties

1.0000000
MCQ18
The hydrocarbons are broadly classified into___

Saturated, unsaturated and aromatic

0.0000000
Alicyclic, heterocyclic and aromatic

0.0000000
Alkane, alkene and alkyne

0.0000000
Aliphatic, alicyclic and aromatic

1.0000000
MCQ19
In _____ reaction, a conjugated diene is treated with an unsaturated compound called dienophile to yield a cyclic system.

Diels-Alder reaction

1.0000000
Wittig reaction

0.0000000
Wurtz reaction

0.0000000
Kolbe electrolytic reaction

0.0000000
MCQ20
Reactions that lead to the attachment of alkyl group to a molecular fragment are called ___.

Acylation reaction

0.0000000
Addition reaction

0.0000000
Nucleophillic reaction

0.0000000
Alkylation reaction

1.0000000
MCQ21
_____ involves elimination of the halogen atom together with a hydrogen atom from an adjacent carbon atom.

Dehydrohalogenation

1.0000000
halogenation

0.0000000
hydrohalogenation

0.0000000
Dihydrohalogenation

0.0000000
MCQ22
Alkyl halides are converted to alkenes by _____,

hydrogenation

0.0000000
dehydrogenation

1.0000000
alkylation

0.0000000
acylation

0.0000000

MCQ23
Rapid decolourization of bromine solution serves as a test for the presence of the ___ in a compound.

C-C

0.0000000
C=C

1.0000000
C=C

0.0000000
C=O

0.0000000
MCQ24
When alkene reacts with borane, addition to the C=C takes place to yield organoborane a compound with a carbon-boron bond, the reaction is known as ____.

hydrogenation

0.0000000
halogenation

0.0000000
hydroboration

1.0000000
hydrohalogenation

0.0000000
MCQ25
In ___ compounds, the molecules are formed by the sharing of electron pairs between the constituent atoms.

non-covalent

0.0000000
electrovalent

0.0000000
ionic

0.0000000
covalent

1.0000000
MCQ26
Which of these compounds have a benzene ring with a methyl group at position one?

Aniline

0.0000000
Phenol

0.0000000
Toluene

1.0000000
Anisole

0.0000000
MCQ27
A benzene ring with a methyl group at position one and nitro group at position three is ___

o-nitrobenzene

0.0000000
p-nitroxylene

0.0000000
o-nitroaniline

0.0000000
p-nitrotoluene

1.0000000
MCQ28
What is the functional group of esters?

-COOCO-

0.0000000
-COOH

0.0000000
RCOOR'

1.0000000
-CHO

0.0000000
MCQ29
Which of these theoretical concept enables realistic modelling of molecular structure?

hydrogenation

0.0000000
substitution

0.0000000
ionization

0.0000000
hybridization

1.0000000
MCQ30
Benzene is an example of which type of hydrocarbon?

Alicyclic hydrocarbon

0.0000000
Arene hydrocarbon

0.0000000
Aromatic hydrocarbon

1.0000000
Alkene hydrocarbon

0.0000000

MCQ31
_____ determines the number of hybrid orbitals generated.

Number of protons

0.0000000
Number of electrons

0.0000000
Number of atomic orbitals

0.0000000
Number of shells

1.0000000
MCQ32
When a compound has carbon-nitrogen double bond it is called?

Amino

0.0000000
Amine

0.0000000
Imine

1.0000000
Nitrile

0.0000000
MCQ33
When a compound has carbon-nitrogen triple bond it is called?

Amine

0.0000000
Amino

0.0000000
Imine

0.0000000
Nitrile

1.0000000
MCQ34
Depending on the number of alkyl group attached to the nitrogen atom, the amines are classified as?

Imine, amino and amide

0.0000000
Saturated unsaturated and partially saturated

0.0000000
Primary, secondary and tertiary amines

1.0000000
First degree, second degree and third degree amines

0.0000000
MCQ35
In alcohol, when the oxygen atom is replaced by a sulphur atom is called ___

Sulphuric acid

0.0000000
Sulfhydryl

0.0000000
Thiol

1.0000000
Sulphurnol

0.0000000