Assessment 6  Transition Metal Organometallic Chemistry: Principles To Applications

The due date for submitting this assignment has passed. Due on 2018-03-07, 23:59 IST.

Submitted assignment

1) The cleavage of a C−H bond during C−H activation by a transition metal involve,

☐ oxidative addition
☐ agostic interaction
☐ reductive elimination
☐ metal to ligand s-donation

No, the answer is incorrect.
Score: 0

Accepted Answers:
oxidative addition
agostic interaction

2) The application(s) of C−H activation is(are),

☐ alkane functionalization
☐ disintegration of alkanes to CO₂ and H₂O
☐ N₂ fixation
☐ redox reactions

No, the answer is incorrect.
Score: 0

Accepted Answers:
alkane functionalization

3) The most challenging bond to activate is,

☐ H−H
4) R_F−M complexes are stable owing to (R_F = perfluoroalkyl, M = metal),

- M−C overlap increased as a result of contracted M orbitals arising from higher partial charge on M
- M−C overlap decreased as a result of contracted M orbitals arising from higher partial charge on M
- lower energy p*- MO of R_F facilitates the R_F←M back bonding
- higher energy p*- MO of R_F facilitates the R_F←M back bonding

No, the answer is incorrect.
Score: 0

Accepted Answers:
M−C overlap increased as a result of contracted M orbitals arising from higher partial charge on M
lower energy p*- MO of R_F facilitates the R_F←M back bonding

5) The cis orientation of the ligands is required for the reaction(s),

- oxidative addition
- reductive elimination
- migratory insertion
- β-H transfer

No, the answer is incorrect.
Score: 0

Accepted Answers:
reductive elimination
migratory insertion

6) The reversal of polarity observed in,

- CH_3−Cl
- CH_3−I
- CF_3−Cl
- CF_3−I

No, the answer is incorrect.
Score: 0

Accepted Answers:
CF_3−I

7) The metal→ligand p-back donation is least in,

- metal carbonyl complexes
- metal alkyl complexes
- metal carbene complexes (Fischer type)
- metal alkene complexes

No, the answer is incorrect.
Score: 0

Accepted Answers:
metal alkyl complexes
8) Between Ti(CH\textsubscript{3})\textsubscript{4} and Ti(Ph)\textsubscript{4},
- Ti(CH\textsubscript{3})\textsubscript{4} is more stable than Ti(Ph)\textsubscript{4}
- Ti(CH\textsubscript{3})\textsubscript{4} is less stable than Ti(Ph)\textsubscript{4}
- both are stable at room temperature
- Ti(CH\textsubscript{3})\textsubscript{4} has \(\beta\)-hydrogen atom

No, the answer is incorrect.
Score: 0
Accepted Answers:
Ti(CH\textsubscript{3})\textsubscript{4} is less stable than Ti(Ph)\textsubscript{4}

9) Predict the product of the reaction,

\[
(R\textsubscript{3}P)\text{Pt} \quad \xrightarrow{\text{HCl}} \quad \text{Product}
\]

No, the answer is incorrect.
Score: 0
Accepted Answers:

10) Predict the product of the reaction,
No, the answer is incorrect.
Score: 0
Accepted Answers: