



Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)

Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B

Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – March 2021 I Semester

Class : I UG
Major : Chemistry

Time : 3 Hours
Max. Marks: 100

18BCHC02 Basics of Chemistry – II

Part A

10 x 1 = 10

Choose the Correct Answer

- The ratio of the radius of cations to the radius of the anions is known as _____.
a. Radius ratio
b. Atomic radii
c. Covalent radii
d. Ionic radii
- Ionization energy is also known as _____.
a. ionization potential
b. periodicity
c. ionic crystal
d. ionicity
- What are the scales used to identify electronegativity?
a. Pauling scale
b. Mulliken scale
c. Allred and Rochow's scale
d. All the above
- Oxidation state of hydrogen is _____.
a. 2
b. 1
c. -1
d. -2
- Alkenes can be oxidized with ozone to form _____.
a. aldehyde
b. carboxylic acid
c. ketones
d. All the above
- Diene is a covalent compound that contains _____.
a. two double bonds
b. one double bond
c. triple bond
d. sigma bond
- Hydration of alkynes is
a. addition of hydrogen
b. addition of water
c. addition of oxygen
d. removal of water
- In hydroboration-oxidation reaction, alkenes converted to _____.
a. alcohol
b. ketone
c. carboxylic acid
d. alkanes
- Hybridization for BeCl_2 is _____.
a. sp^2
b. sp
c. sp^3
d. dsp^2
- Bond order for hydrogen molecule is _____.
a. 1
b. 2
c. 3
d. 0

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. What is ionization potential? Explain.
(or)
- 11.b. What is an ionic radius? How do you determine the covalent radius?
- 12.a. Relate oxidation state of the element and its electro negativity.
(or)
- 12.b. Define electron affinity. What is the impact of electron affinity on chemical behaviour?
- 13.a. Write Diels-alder reaction with mechanism. Give two examples.
(or)
- 13.b. How do you oxidize alcohols and alkenes using potassium permanganate and explain with suitable examples.
- 14.a. What is halogenation reaction? Explain halogenation of alkynes with example.
(or)
- 14.b. Summarize metal ammonia reduction of alkynes with example.
- 15.a. Find out the hybridization of SF₆ and IF₇ .
(or)
- 15.b. State Hydrogen Bonding, Van der Waals Forces, London forces with example.

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. What are the factors influencing the magnitude of ionic radius? Explain.
(or)
- 16.b. Discuss the applications of ionization potential concept.
- 17.a. State electronegativity. Explain the scales of electronegativity.
(or)
- 17.b. Correlate the ionization potential and electron affinity with electronegativity.
- 18.a. What is Markownikoff's and anti Markownikoff's rule? Explain with mechanism and example.
(or)
- 18.b. Explain the following. i. 1,2 and 1,4 addition ii. allylic and vinylic substitution reaction.
- 19.a. Describe mechanism of electrophilic addition reaction of alkynes.
(or)
- 19.b. Explain polymerization of alkynes with mechanism and example.
- 20.a. What is molecular orbital theory? Apply molecular orbital theory for Be₂ and NO.
(or)
- 20.b. Describe VSEPR theory. Explain VSEPR theory for H₂O.
