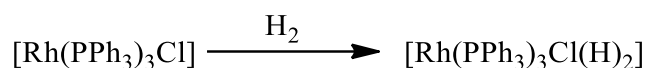


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Sample MCQs for students of Semester IV Inorganic Chemistry

1. Technique in which change in the weight of the substance is recorded as a function of temperature is,
(a) Thermogravimetric analysis, (b) Differential thermal Analysis,
(c) Differential scanning calorimetry, (d) Evolved gas analysis
2. $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$ is subjected to thermogravimetry in the temperature range from 100-250°C only. Identify the molecule evolved during the decomposition process.
(a) CO, (b) H_2O , (c) CO_2 , (d) CaO
3. Identify the element that shows Ferromagnetism,
(a) Ti, (b) Mn, (c) V, (d) Fe
4. Fe_3O_4 substance is,
(a) Paramagnetic, (b) Ferromagnetic, (c) Ferrimagnetic, (d) Diamagnetic
5. Identify an Abelian point group,
(a) C_{2v} , (b) C_{5v} , (c) C_{3v} , (d) C_{4v}
6. What is valence electron count for $[\text{Co}_3(\text{CO})_2(\text{C}_6\text{H}_6)_3]^+$ cluster?
(a) 36, (b) 18, (c) 72, (d) 48
7. The fragment $\text{Mn}(\text{CO})_5$ is isolobal with,
(a) CH_2 , (b) CH, (c) CH_3 , (d) CH_4
8. Which one of the following ligand do not form stable binary complexes with lanthanoid?
(a) Cp, (b) C_6H_6 , (c) CO, (d) Cp^*
9. The reaction step involved in the following reaction is known as,



(a) Dissociation, (b) Oxidative addition, (c) Insertion, (d) Reductive elimination

10. Hydrogenation of terminal double bond in unsaturated olefins is selectively catalyzed by

(a) $[(PPh_3)_2Rh(CO)(H)]$, (b) $H_2PtCl_6 \cdot 6H_2O$, (c) $[HCo(CO)_4]$, (d) $[Pd(PPh_3)_4]$

11. Which of the following statement is True about carbon nanotubes?

(a) Carbon nanotubes are the heaviest material on earth.

(b) Carbon nanotubes are allotropes of diamond.

(c) Owing to their extraordinary thermal conductivity and mechanical and electrical properties, carbon nanotubes find numerous applications in various fields.

d. Carbon nanotubes have length-to-diameter ratio of up to 1:132,000,000

12. n-type semiconductor is an example of

(a) extrinsic semiconductor.

(b) intrinsic semiconductor.

(c) super conductor.

(d) insulators.

13. The resolving power of TEM is derived from _____

(a) electrons

(b) specimens

(c) power

(d) ocular system

14. Which of the following Ag^+ ion conductor has highest conductivity at room temperature?

(a) α -AgI

(b) β -AgI

(c) μ -AgI

(d) RbAg₄I₅

15. The kinetic energy of the ejected photoelectron is dependent upon the energy of which of the following?

(a) Ions around

(b) Photons around

(c) Material

(d) Impinging photon

16. In Na[Mn(CO)₅] the oxidation state of Mn is

(a) 7+, (b) 2+, (c) 1+, (d) 1-

17. The hybridization of Silicon in tetramethyl silane is

(a) sp²d, (b) d²sp, (c) sp³, (d) sp³d

18. In pure metals free electrons are responsible for

(a) Electrical conduction, (b) Sound waves, (c) Electrical and thermal conduction, (d) Insulation

19. The resonant frequencies for NMR is observed in the spectral region of

(a) Microwave, (b) Far-IR, (c) Radiofrequency, (d) UV region

20. Which of the following molecules will not absorb IR radiation?

(a) COCl₂, (b) Cl₂, (c) CO₂, (d) CO

- 21 The literature review will examine
- a) Only opinions
 - b) Only one side of the main argument.
 - c) Only facts
 - d) All aspects of a topic.
- 22 The starting point for a literature search is:
- a) Tertiary data
 - b) Primary data
 - c) Secondary data
 - d) Some other data
- 23 Which of these will not help you to decide whether a publication is reputable?
- a) Citation rate
 - b) Audience
 - c) Advertising inside
 - d) Importance of peers
- 24 Temperature (°C) is example -----variable
- a) Nominal variable
 - b) Ordinal variable
 - c) Interval variable
 - d) Ratio
- 25 The most common data point is called
- a) Mean
 - b) Mode
 - c) Median
 - d) Variance
- 26 Which of these is not important in an oral presentation?
- a) Words
 - b) Body language

- c) Gestures
- d) The number of people as audience.

27 Which of these is the best way to establish a proper rapport with audience?

- a) Pointing a finger
- b) Making eye contact
- c) Waving your hands
- d) Standing erect.

28 Which of these must be avoided in any presentation?

- a) Proper grammar
- b) Complex words
- c) Short sentences
- d) Clear voice

29 What is full form of MSDS Sheet?

- a) Material safety data sheet
- b) Material service data sheet
- c) Molecular safety data sheet
- d) Manufacturer service data sheet