



## CHEMISTRY

### BOOKS - MODERN PUBLICATION CHEMISTRY (KANNADA ENGLISH)

#### MOCK TEST PAPER - 1

#### Mcqs

1. Which of the following statement is not correct ?

- A. In the presence of moisture, sulphur dioxide acts as reducing agent as well as a bleaching agent.
- B. Sulphur trioxide is absorbed by conc. Sulphuric acid to form peroxo mono sulphuric acid known as oleum.

C.  $SF_6$  is much less reactive than  $SF_4$  because in  $SF_6$ , S is more sterically protected than in  $SF_4$ .

D.  $ICl_3$  conducts electricity on electrolysis showing the existence of  $I^{3+}$  ions.

**Answer: B**

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2. Which of the following statement is correct ?

A.  $FeI_3$  is stable in aqueous solution.

B. An acidified  $K_2Cr_2O_7$  solution, on reaction with lead acetate gives yellow precipitate.

C. The species  $[CuCl_4]^{2-}$  exists but  $[CuI_4]^{2-}$  does not.

D. Both copper (I) and copper (II) salts are known in aqueous solutions.

**Answer: C**

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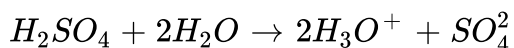
3. A sol of egg albumin can be coagulated by addition of :

- A. Electrolytes
- B. Alcohols
- C. Both electrolytes and alcohols
- D. None of these

**Answer: C**

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4. If  $H_2SO_4$  ionises as :



Then total number of ions produced by 0.3 M  $H_2SO_4$  will be :

A.  $9.03 \times 10^{21}$

B.  $3.01 \times 10^{22}$

C.  $6.02 \times 10^{22}$

D.  $5.40 \times 10^{23}$

**Answer: D**



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5. When a light of suitable frequency strikes a metal surface, then the number of ejected electrons :

A. Increases with increase of frequency of incident photon

B. Decreases with increase of frequency of incident photon

C. Does not depend on the frequency of photon but depends only on the intensity of incident light

D. Depends both on intensity and frequency of the incident photon.

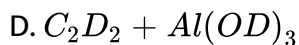
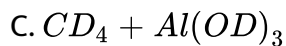
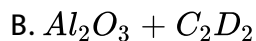
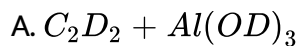
**Answer: C**



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**6. The products of the reaction**

$Al_4C_3 + D_2O \rightarrow \dots\dots + \dots\dots$  are :



**Answer: C**



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**7. RNA and DNA are chiral molecules, their chirality is due to :**

- A. Chiral bases
- B. Chiral phosphate ester units
- C. D -sugar component
- D. L - sugar component.

**Answer: C**

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**8. Identify the correct statement :**

- A. Electronegative nature of elements increases in a period
- B. Electronegative nature of elements decreases in a periods
- C. Electronegative nature of elements remains more or less constant  
in a peroid
- D. Electronegative nature of elements more or less constant in a  
peroid

**Answer: A**

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9. In which of the following, the  $C - H$  bond length is shortest ?

A. Ethane

B. Ethene

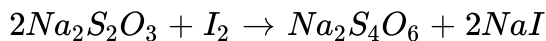
C. Ethyne

D. Benzene

**Answer: C**

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10. During the titration of sodium thiosulphate and iodine, the following reaction takes place :



Which of the following statement is correct ?

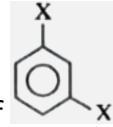
- A. Sodium thiosuphate gets oxidised because oxidation number of S in it increases from + 2 to + 4.
- B. Oxidation number of S increases by 0.5 while that iodine decreases by -1.
- C. Iodine behaves as reducing agent because its oxidation number increases.
- D. The product  $Na_2S_4O_6$  is sodium hexathionate and oxidation number of S in it is 2.5.


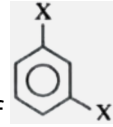
**Answer: B**



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11. The dipole moment of  is 1.5D. The dipole moment of  is :

A. 1.5 D

B. 2.5 D

C. 7.5 D

D. 9.0D

**Answer: A**



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12. 300 mL of gas at  $27^{\circ}C$  is cooled to  $10^{\circ}C$  at constant pressure, the final volume is :

A. 540 mL

B. 135 mL

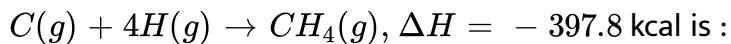
C. 283 mL

D. 350 mL

**Answer: C**

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**13.** The bond dissociation energy of C-H in  $CH_4$  from the equation



A.  $+99.45 \text{ kcal}$

B.  $-99.45 \text{ kcal}$

C.  $+397.8 \text{ kcal}$

D.  $+198.9 \text{ kcal}$

**Answer: A**

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14. The formation of  $O^{2-}(g)$  starting from  $O(g)$  is endothermic by  $603kJmol^{-1}$ . If electron gain enthalpy of  $O(g)$  is  $-141kJmol^{-1}$ , the second electron gain enthalpy of oxygen would be :

- A.  $603kJmol^{-1}$
- B.  $-603kJmol^{-1}$
- C.  $-744kJmol^{-1}$
- D.  $+744kJmol^{-1}$

**Answer: D**



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15.  $AgCl$  dissolves in  $NH_4OH$  due to the formation of :

- A.  $[Ag(NH_4)_2]Cl$
- B.  $[Ag(NH_4)_3]Cl$
- C.  $[Ag(NH_3)_2]Cl$



**Answer: C**



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**16.** Plexiglass is a commercial name of :

- A. Glyptal
- B. Polymethyl methacrylate
- C. Polyacrylonitrile
- D. Polyethylacrylate

**Answer: B**



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**17.** Which of the following alloys is used for making clock pendulums ?

A. Invar

B. Constantan

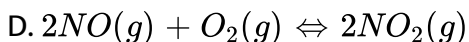
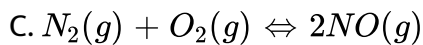
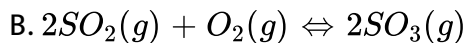
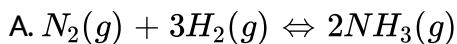
C. Brass

D. Bell metal.

**Answer: A**

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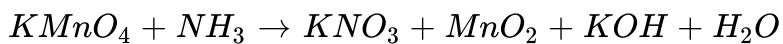
**18.** In which of the following reaction  $K_p$  and  $K_c$  are equal :



**Answer: C**

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19. In the redox reaction :



the stoichiometric coefficients of potassium permanganate and ammonia are respectively :

A. 4,6

B. 8,3

C. 8,6

D. 3,8

**Answer: B**



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20. Rosenmund reduction of acyl chloride gives :

A. an alcohol

B. a hydrocarbon

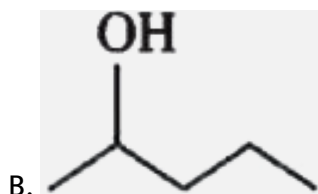
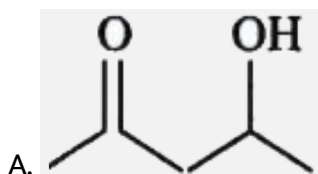
C. an ester

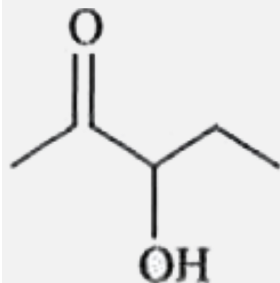
D. an aldehyde.

**Answer: B**

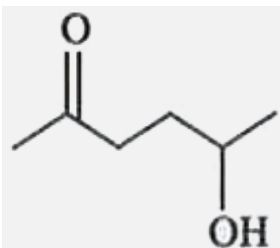
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21. Which of the following will be most readily dehydrated in acidic conditions ?





C.



D.

**Answer: A**



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22. Electron deficient molecular hydride is

A.  $PH_3$

B.  $NF_3$

C.  $B_2H_6$

D.  $CH_4$



**Answer: C**

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**23.** Which of the following alkali metal halides has the lowest lattice energy ?

A. NaBr

B. NaCl

C. KBr

D. CsI.

**Answer: D**

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**24.** When iodoform is treated with silver powder it forms :

A. acetylene

B. ethylene

C. methane

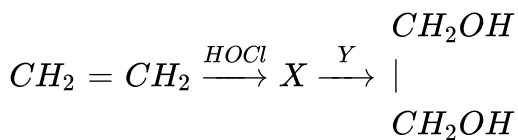
D. ethane

Answer: A



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25. In the reaction sequence,



the molecule, X and reagent, Y, respectively are :

A.  $CH_2OHCH_2Cl$ ,  $Na_2CO_3$ ,  $H_2O$

B.  $CH_3CH_2OH$  and  $H_2SO_4$

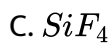
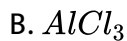
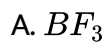
C.  $CH_2Cl - CH_2OH$  and  $HONO$

D.  $CH_3 - CH_3$  and heat.

**Answer: A**

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**26.** Which of the following cannot act as Lewis acid?



**Answer: D**

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**27.** Of the five isomeric hexanes, the isomer which can give two monochlorinated compound is :

A. n - hexane

B. 2,3 - dimethyl butane

C. 2,2- dimethyl butane

D. 2 - methyl pentane.

**Answer: B**

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**28.** In the reaction



the compound X is :

A.  $C_6H_5CH_3$

B.  $C_6H_5CH_2Cl$

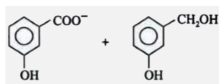
C.  $C_6H_5CHO$

D.  $C_6H_5COOH$

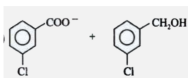
Answer: C

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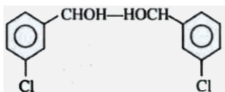
29. When m - chlorobenzaldehyde is treated with KOH solution, the product (s) is/are :



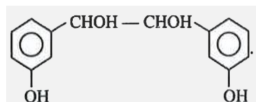
A.



B.



C.



D.

Answer: B



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30. Dettol is a mixture of chloroxylenol and :

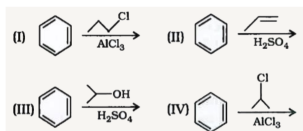
- A. Phenol
- B. Terpeneol
- C. chloromphenicol
- D. bithional

**Answer: B**



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31. Which of the following reactions would give isopropylbenzene as the major product ?



A. I and IV only

B. II and III only

C. II, III, IV only

D. All of the above

**Answer: A**

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32. The gas leaked from a storage tank of the Union Carbide plant in Bhopal gas tragedy was :

A. Phosgene

B. Methylisocyanate

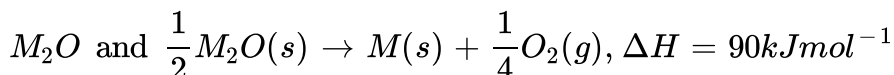
C. Methylamine

D. Ammonia

**Answer: B**

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33. M is a metal which forms an oxide,



When a sample of the metal M reacts with 1 mole of  $O_2(g)$  to form  $M_2O$ ,

$\Delta H$  for the reaction is :

A.  $+180kJ$

B.  $-180kJ$

C.  $-360kJ$

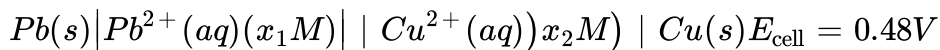
D.  $360kJ$

**Answer:**

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34. Consider the galvanic cell :



which of the following graphs is correct ?

A. 

B. 

C. 

D. 

Answer: B



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35. 1.25 of sample of  $CCl_2F_2$  was cooled at a constant pressure of 1 atm.

From 320 K to 293 K. During cooling, the volume decreased from 274 to

248 mL.  $\Delta H$  and  $\Delta U$  for  $CCl_2F_2$  is ( $C_p = 80.7 J mol^{-1} K^{-1}$ ) :

A.  $-22.5J$ ,  $-19.88J$

B.  $19.88J$ ,  $-25.51J$

C.  $108.26J$ ,  $-4659J$

D.  $-26.7J$ ,  $89.5J$ .

**Answer: A**

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**36.** Co-ordination number of cations in rock salt structure of NaCl is :

A. 4

B. 6

C. 8

D. 9

**Answer: B**

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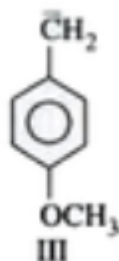
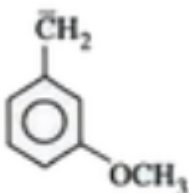
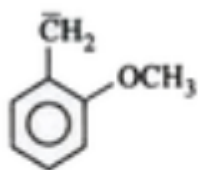
37. Which of the following will show a negative deviation from Raoult's law ?

- A. Acetone - benzene
- B. Acetone - ethanol
- C. Benzene - methanol
- D. Acetone - chloroform

Answer: D

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38. Arrange in decreasing order of stability :



A.  $I > II > III$

B.  $I > III > II$

C.  $II > I > III$

D.  $II > III > I$

**Answer: C**

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**39.** Which of the following contains S - S linkage ?

A. Thiosulphate ion

B. Pyrosulphate ion

C. Peroxydisulphate ion

D. Peroxymonosulphate ion.

**Answer: A**

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40. Electrolysis of water with 1 Faraday electricity gives :

- A. 1 mole of oxygen
- B. 1 gram equivalent of oxygen
- C. 1 molecule of oxygen
- D. 1 atom of oxygen

**Answer: B**



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41. Which one of the following is wrong about molecularity of a reaction ?

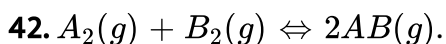
- A. It may be whole number or fractional
- B. It is calculated from reaction mechanism

C. It is the number of molecules of the reactants taking part in a single step chemical reactions.

D. It is always equal to the order of elementary reaction

**Answer: A**

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The equilibrium constant of above reaction at  $100^\circ C$  is 50. If a one litre flask containing one mole of  $A_2$  is connected to a two litre flask containing two moles of  $B_2$ , how many moles of AB will be formed at 373 K?

A. 3.5

B. 1.91

C. 10

D. 5.6

**Answer: B**

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43. The difference between the boiling point and freezing point of an aqueous solution containing sucrose (mol. Wt. =  $342 \text{ g mol}^{-1}$ ) in 100 g of water is  $105.0^\circ \text{C}$ . If  $K_f$  and  $k_b$  of water are  $1.86$  and  $0.51 \text{ K kg mol}^{-1}$  respectively, the weight of sucrose in the solution is about :

A. 34.2 g

B. 342 g

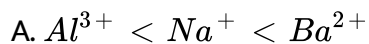
C. 7.2 g

D. 72g

**Answer: D**

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44. The coagulating power of electrolytes having ions  $Na^+$ ,  $Al^{3+}$  and  $Ba^{2+}$  for arsenic sulphide sol increase in the order :



**Answer: C**



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45. Phosphine can be prepared by the reaction of water with :

A. calcium phosphide

B. calcium hydride

C. calcium dihydrogen phosphate

D. calcium phosphate



**Answer: A**



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**46.** A balloon has a volume of 10 L at a pressure of 1 atm. When the balloon is immersed to the bottom of a lake, its volume reduces to 1.25 L. Assuming 1 atm. Pressure to be equivalent to 10 m column of water and no change in temperature, what is the depth of lake ?

A. 70 m

B. 80 m

C. 90 m

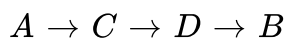
D. None of these

**Answer: A**



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47. The reaction between A to B is not feasible but on changing entropy through a series of steps :



$$\Delta S(A \rightarrow C) = 50eu$$

$$\Delta S(C \rightarrow D) = 30eu$$

$$\Delta S(B \rightarrow D) = 20eu.$$

The entropy change for  $A \rightarrow B$  would be :

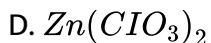
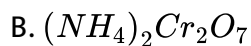
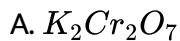
- A. 100 eu
- B. 60 eu
- C.  $-60eu$
- D.  $-100eu$

**Answer: B**



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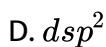
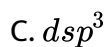
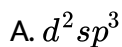
48. Which of the following does not give oxygen on heating ?



**Answer: D**

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**49.** In  $Fe(CO)_5$ , the  $Fe \leftarrow CO$  a bond results by the overlap between filled sp hybrid orbital of C - atom of CO molecule and vacant :



**Answer: C**

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50. In a system.



equilibrium is established. The pressure of B vapour is doubled to re - establish the equilibrium. The factor by which D is changed is :

A. 2

B. 3

C.  $\sqrt{2}$

D.  $\sqrt{3}$

**Answer: C**

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51. When a photoelectric substance was irradiated with a light of frequency  $4 \times 10^{12}$  kHz, the photoelectrons emitted when the same

substance was irradiated with light of frequency  $2 \times 10^{12}$  kHz. The work function of the substance is :

A.  $6.6 \times 10^{-19} J$

B.  $6.6 \times 10^{-20} J$

C.  $3.3 \times 10^{-19} J$

D.  $3.3 \times 10^{-20} J$

**Answer: A**



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52. Under identical conditions, the  $S_{N1}$  reaction will occur most efficiently with :

A. tert - butyl chloride

B. 1-chlorobutane

C. 2 - methyl - 1- chloropropane

D. 2-chlorobutane

**Answer: A**

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53. The IUPAC name of  $CH_3CH_2OCH(CH_3)_2$  is :

A. isopropoxyethane

B. 2-methoxybutane

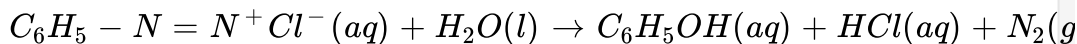
C. 1-methyl - 1- methoxyethane

D. 2-ethoxypropane

**Answer: D**

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54. The following reaction follows first order kinetics :



If  $p_t$  is the pressure of  $N_2$  at any time,  $t$  and  $p_\infty$  is the pressure after completion of the reaction, then which graph is correct :

A. 

B. 

C. 

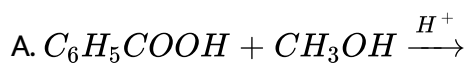
D. 

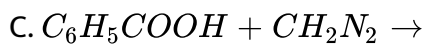
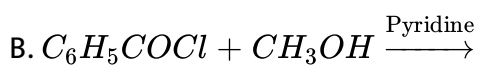
**Answer: C**



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55. Methyl benzoate can be prepared by :





D. All the above methods.

**Answer: D**

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56. Acid anhydrides on reaction with primary amines give:

A. imine

B. 2° amine

C. amide

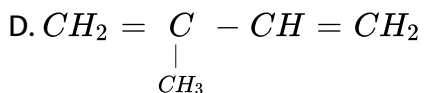
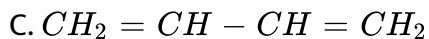
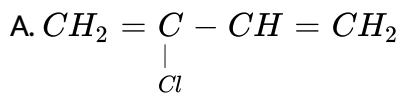
D. imide

**Answer: C**

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57. Which is the monomer of Neoprene in the following ?



Answer: A



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58. a) What do we call a drug that binds to the receptor site and inhibit its natural function

A. antagonists

B. agonists

C. enzymes

D. molecular targets.

**Answer: B**

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**59.** Which one of the following statements is correct ?

- A. All amino acids are optically active
- B. All amino acids except glycine are optically active.
- C. All amino acids except glutamic acid are optically active.
- D. All amino acids except lysine are optically active.

**Answer: B**

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**60.** Mac Arthur Forrest process is used for the extraction of .....ores :

A. Cu

B. Ag

C. Au

D. Pt.

**Answer: C**



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