



CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

MHTCET 2019 PAPER 1

Chemistry

1. Which of following methods is used to separate wolframite and stannic oxide present in cassiterite?

A. Hydraulic washing using Wilfley table

B. Froth flotation

C. Hydraulic classifier

D. Magnetic separation

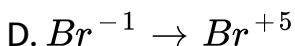
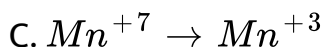
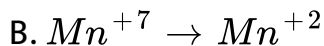
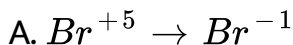
Answer: D



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2. In the reaction,

$MnO_4^{-1}(aq) + Br^{-1}(aq) \rightarrow MnO_2(s) + BrO_3^{-1}(aq)$, the correct change in oxidation number of the species involved is



Answer: D



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3. How many isoprene units are present in abscisic acid?

- A. Three
- B. Two
- C. Four
- D. Five

Answer: A



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4. Action of hydrogen iodide on anisole gives,

- A. phenol and iodomethane
- B. iodobenzene and methanol
- C. phenol and methanol
- D. iodobenzene and iodomethane

Answer: A



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5. Which among the following compounds is used to decaffeinate coffee?

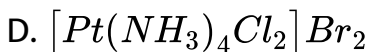
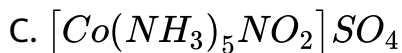
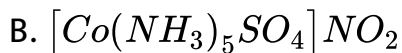
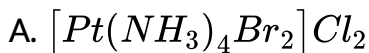
- A. Iodoform
- B. Carbon tetrachloride
- C. Methylene dichloride

D. Chloroform

Answer: C

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6. Which complex among the following gives a white precipitate on treatment with an aqueous solution of barium chloride?



Answer: C

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7. When $CuSO_4$ solution in water is treated with concentrated HCl it turns

- A. violet
- B. yellow
- C. purple
- D. green

Answer: B



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8. Which of the following polymer is used in paints?

- A. Gutta percha

B. Melamine

C. Buna-S

D. Novolac

Answer: D



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9. Three moles of an ideal gas are expanded isothermally from a volume of 300 cm^3 to 2.5 L at 300 K against a pressure of 1.9 atm: The work done in joules is

A. -423.56 J

B. $+423.56 \text{ J}$

C. -4.18 J

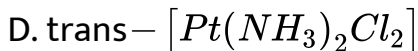
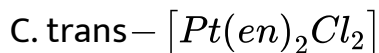
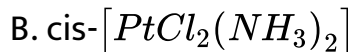
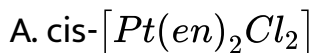
D. $+4.8 \text{ J}$

Answer: A



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10. Which among the following is used in the treatment of cancer?



Answer: B



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11. Which among the following pairs of compounds is not isomorphous?

A. $NaNO_3$ and $CaCO_3$

B. K_2SO_4 and K_2SeO_4

C. NaCl and KCl

D. NaF and MgO

Answer: C



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12. Which among the following compounds is used as selective weed killer?

A. Picric acid

B. 2, 4-dichlorophenoxy acetic acid

C. 2, 4, 6-trichlorophenoxy acetic acid

D. Salol

Answer: B



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13. Calculate the difference between heat of combustion of carbon monoxide gas at constant pressure and at constant volume at 27°C? ($R = 2 \text{ cal } K^{-1} \text{ mol}^{-1}$)

A. 54 cal

B. - 600 cal

C. - 300 cal

D. 27 cal

Answer: C



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14. The conductivity of an electrolytic solution decreases on dilution due to

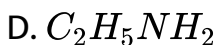
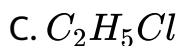
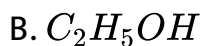
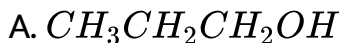
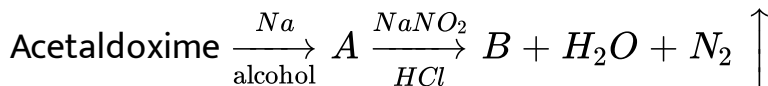
- A. decrease in number of ions per unit volume
- B. increase in ionic mobility of ions
- C. increase in percentage ionisation
- D. increase in number of ions per unit volume

Answer: D



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15. Identify B in the following reaction,



Answer: B



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16. Which among the following solids shows Frenkel defect?



C. KCl

D. AgCl

Answer: D



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17. A bottle of cold drink has 200 mL liquid in which CO_2 is 0.1 molar. If CO_2 behaves as ideal gas the volume of CO_2 at S.T.P. solution of cold drink is

A. 22.4 L

B. 0.224 L

C. 2.24 L

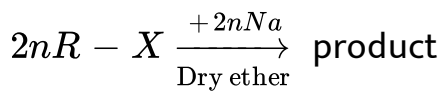
D. 0.448 L

Answer: D



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18. In the reaction,



The product obtained is

A. $2n$ -alkene

B. n -sodium halide

C. n -alcohol

D. n -alkane

Answer: D



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19. The bacteriostatic antibiotic from the following is

- A. tetracycline
- B. aminoglycosides
- C. penicillin
- D. ofloxacin

Answer: A



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20. Nitroalkanes are obtained in laboratory from primary or secondary alkyl halides by the action of

- A. $AgNO_2$
- B. $NaNO_3$

C. $AgNO_3$

D. HNO_3

Answer: A



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21. Which of following bonds has maximum bond length?

A. C -O

B. C-H

C. C-C

D. C-N

Answer: C



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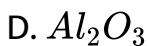
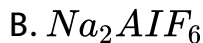
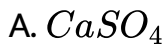
22. Which of the following sets of components form homogeneous mixture?

- A. Phenol+ Water
- B. Sugar+ Benzene
- C. Silver chloride+ Water
- D. Ethyl alcohol+ Water

Answer: A

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23. Which among the following compounds in crystalline form is used for making Nicol's prism?



Answer: C



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24. Two electrolytic cells are connected in series containing $CuSO_4$ solution and molten $AlCl_3$. If in electrolysis 0.4 moles of 'Cu' are deposited on cathode of first cell. The number of moles of 'Al' deposited on cathode of the second cell is

A. 0.6 moles

B. 0.27 moles

C. 0.18 moles

D. 0.4 moles

Answer: B



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25. Mandelonitrile is obtained by the reaction between hydrogen cyanide and

A. propionaldehyde

B. benzaldehyde

C. aceteldehyde

D. acetone

Answer: B



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26. The ionic charges on chromate ion and dichromate ion respectively is

A. -2 , -2

B. -3 , -2

C. -2 , -4

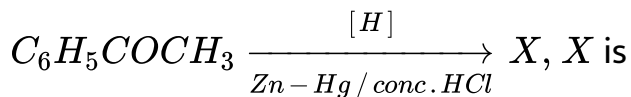
D. -4 , -2

Answer: A



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27. In the reaction,



- A. toluene
- B. methyl benzene
- C. benzylalcohol
- D. ethyl benzene

Answer: D



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28. What is the percentage of carbon in urea? (Atomic mass C =

12, H = 1, N = 14, O = 16)

- A. 0.2

B. 0.266

C. 0.0667

D. 0.46

Answer: A



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29. α - butylene when subjected to hydroboration oxidation reaction, yields

A. iso-butyl alcohol

B. sec-butyl alcohol

C. n-butyl alcohol

D. tert-butyl alcohol

Answer: C



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30. Calculate van't Hoff-factor for 0.2 m aqueous solution of KCl which freezes at -0.680°C .

$$(K_f = 1.86\text{Kkgmol}^{-1})$$

A. 3.72

B. 1.83

C. 6.8

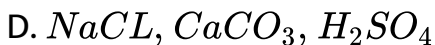
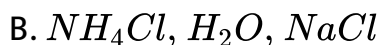
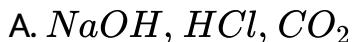
D. 1.86

Answer: B



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31. Which among the following sets of compounds is used as raw material for the preparation of sodium carbonate by Solvay process?



Answer: C



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32. What is the H-S-H bond angle in H_2S ?



B. 92.1°

C. 91°

D. 90°

Answer: B



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33. K' is Henry's constant and has the unit

A. $\text{atm mol}^{-1} \text{dm}^3$

B. $\text{mol}^{-1} \text{dm}^3 \text{atm}^{-1}$

C. atm mol dm^{-3}

D. $\text{mol dm}^{-3} \text{atm}^{-1}$

Answer: D



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34. For the conversion of oxygen to ozone in the atmosphere, nitric oxide in gaseous phase acts as

- A. enzyme catalyst
- B. inhibitor
- C. homogeneous catalyst
- D. heterogeneous catalyst

Answer: C



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35. Which of the following Group 15 elements do not show allotropy?

A. N

B. As

C. Sb

D. Bi

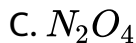
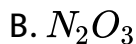
Answer: D



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36. Which among the following oxides of nitrogen is called nitrogen sesquioxide?

A. NO_2



Answer: B

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37. For the elementary reaction

$2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$, identify the correct among the following relations

A.
$$\frac{-d[SO_2(g)]}{dt} = \frac{-d(O_2(g))}{dt}$$

B.
$$\frac{+1}{2} \frac{d[SO_3(g)]}{dt} = \frac{d(SO_2(g))}{dt}$$

C.
$$\frac{+d[SO_3(g)]}{dt} = \frac{-2d(O_2(g))}{dt}$$

D.
$$\frac{+d[SO_2(g)]}{dt} = \frac{-d(O_2(g))}{dt}$$

Answer: C



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38. For a process, entropy change of a system is expressed as

A. $H - TS$

B. $\frac{q_{rev}}{T}$

C. $\frac{T}{q_{rev}}$

D. $q_{rev} \times T$

Answer: B



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39. Which among the following is not a semi-synthetic polymer?

A. Terylene

B. Viscose-rayon

C. Cupra-ammonium silk

D. Acetate rayon

Answer: A



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40. Bassemerisation is used in the extraction of

A. iron

B. copper

C. aluminium

D. zinc

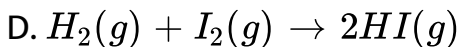
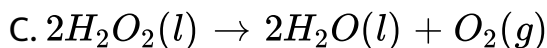
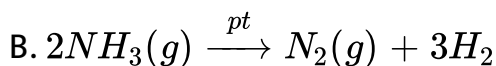
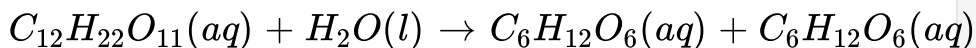
Answer: B



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41. Which among the following reaction is an example of a zero order reaction?

A.



Answer: B



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42. The resistance of $\frac{1}{10}$ M solution is 2.5×10^3 ohm. What is the molar conductivity of solution? (cell constant = 1.25 cm^{-1})

A. $3.5 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$

B. $5.0 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$

C. $2.5 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$

D. $2.0 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$

Answer: B



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43. The van't Hoff factor for $0.1 \text{ M Ba}(\text{NO}_3)_2$ solution is 2.74 .

The degree of dissociation is :

A. 0.87

B. 0.74

C. 0.91

D. 87

Answer: A



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44. What happens when ionic hydrides of s-block elements in molten state are electrolysed?

A. Hydride ion migrates at cathode

B. Dihydrogen is liberated at cathode

C. Hydride ion reforms metal hydride

D. Dihydrogen is liberated at anode

Answer: D



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45. Which of following is not a property of red phosphorus?

- A. Insoluble in carbon disulphide
- B. It does not show chemiluminescence by action of air
- C. It forms phosphine when treated with hot sodium hydroxide solution
- D. It is non-poisonous

Answer: C



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46. The bond line formula of 1-iodo -4, 3-dimeth pentane is

A. 

B. 

C. 

D. 

Answer: C



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47. When propene reacts with HCl in presence peroxide, the product is

A. 1-chloro propane

B. 1, 1-dichloro propane

C. 2-chloro propane

D. 1, 2-dichloro propane

Answer: C



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48. Which among the following is strongest reducing agent?

A. AsH_3

B. BiH_3

C. PH_3

D. SbH_3

Answer: B



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49. Which of the following is not as antiseptic compound?

- A. Boric acid
- B. Iodoform
- C. Hydrogen peroxide
- D. Potassium sulphite

Answer: D

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50. A β -pleated sheet organisation in a polypeptide chain is an example of

- A. secondary structure

B. primary structure

C. tertiary structure

D. quaternary structure

Answer: A



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