



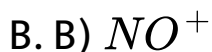
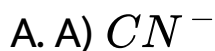
CHEMISTRY

BOOKS - KCET PREVIOUS YEAR PAPERS

MODEL TEST PAPER 4

Chemistry

1. Which of the following have identical bond order



C. C) O_2^-

D. D) CN^- and NO^+ both

Answer: D



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2. In the aluminium thermite process, aluminium acts as

A. A flux

B. An oxidising agent

C. A solder

D. A reducing agent

Answer: D



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3. The introduction of neutron into the nuclear composition of an atom would lead to a change in

A. Its atomic weight

B. the chemical nature of the atom

C. Its atomic number

D. The number of the electron

Answer: A



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4. Oxidation state of nitrogen is incorrectly given for

- | | | |
|-----|----------------------|-----------------|
| A. | Compound | Oxidation State |
| (a) | Mg_3N_2 | -3 |
| B. | Compound | Oxidation State |
| (b) | NH_2OH | -1 |
| C. | Compound | Oxidation State |
| (c) | $(N_2H_5)_2SO_4$ | +2 |
| D. | Compound | Oxidation State |
| (d) | $[Co(NH_3)_5Cl]Cl_2$ | -3 |

Answer: C



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5. ${}_{92}\text{U}^{235}$ belong to group IIIB to periodic table. If it loses one alpha particle, the new element will belong to the group

A. VB

B. IA

C. IIA

D. IIIB

Answer: C



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6. The pH of 10^{-10} M NaOH solution is nearest to :

A. - 10

B. 7

C. 10

D. 4

Answer: B



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7. Which does not contribute significantly to acid rains ?

A. CO

B. NO_2

C. CO_2

D. SO_2

Answer: A



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8. To change strength of 25 ml of 0.15 M HCl to 0.1M , the quantity of water that is to be added is

A. 12.5 ml

B. 18.75 ml

C. 25.0 ml

D. 37.5 ml

Answer: A



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9. Chromium plating can involve the electrolysis of an electrolyte of an acidified mixture of chromic acid and chromium sulphate. If during electrolysis the article being plated increases in mass by 2.6 g and 0.6 dm³ of oxygen are evolved at an inert anode, the oxidation state of chromium ions being discharged must be (assuming Cr = 58 and 1 mole of gas at room temperature and pressure occupies 24 dm³)

A. A) +2

B. B) 0

C. C) +1

D. D) -1

Answer: A



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10. The density of the neon will be highest at

A. 273° , 2 atm

B. $273^{\circ} C$, 1 atm

C. $0^{\circ} C$, 2 atm

D. STP

Answer: C



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11. The volume of air needed for complete combustion of 1 kg of carbon at STP is

A. 1866.67 litre

B. 933.33 litre

C. 93.33 litre

D. 9333.33 litre

Answer: D



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12. 300 ml of gas at $27^{\circ}C$ is cooled to $-3^{\circ}C$ at constant pressure. The final volume is

A. 350 ml

B. 135 ml

C. 270 ml

D. 540 ml

Answer: C



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13. What is the charge in coulomb of Fe^{3+} ion

A. $6.4 \times 10^{19} C$

B. $8 \times 10^{-19} C$

C. $1.6 \times 10^{-19} C$

D. $4.8 \times 10^{-19} C$

Answer: D



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14. 20 litre of hydrogen gas weigh about

A. 44.8g

B. 20g

C. 12.2 g

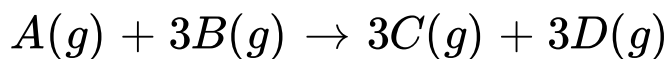
D. 1.8 g

Answer: D



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15. For gaseous reaction,



ΔE is 17 kcal at $27^{\circ}C$. Assuming

$R = 2 \text{ cal K}^{-1}, \text{ mol}^{-1}$, the value of ΔH for the above reaction will be

A. 20.0 kcal

B. 16.4 kcal

C. 18.2 kcal

D. 15.8 kcal

Answer: C



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16. During isothermal transformation of an ideal gas energy

- A. Decreases as the pressure decreases
- B. Decreases as the volume decreases
- C. Increases the pressure increases
- D. Remains fixed

Answer: D



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17. The equilibrium constant at $323^{\circ}C$ is 1000.

What would be its value in the presence of a catalyst for the following reaction,



A. Impossible to predict

B. $1000 \times [\text{catalyst}]$

C. $\frac{1000}{[\text{catalyst}]}$

D. 1000

Answer: D



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18. The strength of an acid depends on its :

A. Basicity

B. Molecular weight

C. Acidity

D. Degree of dissociation

Answer: D



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19. The inversion of cane sugar into glucose and fructose is reaction of

A. I order

B. III order

C. II order

D. Zero order

Answer: A



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20. Which can act as a protective colloid

A. Silica gel

B. CCl_4

C. Gelatine

D. Oil

Answer: C



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21. Osmotic pressure of solution (density is 1 g/ml) containing 3g of glucose(molecular weight=180 g) in 60 g of water at $15^{\circ}C$ is

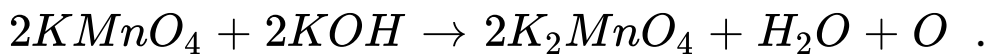
- A. 5.57 atm
- B. 0.65 atm
- C. 6.25 atm
- D. 0.34 atm

Answer: C



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22. In alkaline medium $KMnO_4$ reacts as follows,



Therefore its equivalent weight will be

A. 158.0

B. 52.7

C. 79.0

D. 31.6

Answer: A



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23. Which species is the strongest oxidising agent



Answer: A



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24. Chlorine has +1 oxidation state in

A. Cl_2O

B. $HClO_3$

C. ICl_3

D. HCl

Answer: A



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25. On adding 20 ml of 0.1 N $NaOH$ solution to 10 ml of 0.1 HCl , the resulting solution will

A. have no effect on red or blue litmus paper

B. turn blue litmus red

C. turn methyl orange red

D. turn phenolphthalein solution pink

Answer: D



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26. In the series ethane, ethylene and acetylene, the

$C - H$ bond energy is

A. Greatest in ethylene

B. Greatest in acetylene

C. Greatest in ethane

D. The same in all the three compounds

Answer: A



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27. A radioactive element has a half life of 20 minutes, How much time should elapse before the element is reduced to $1/8$ of its original value

A. A) 160 minutes

B. B) 60 minutes

C. C) 30 minutes

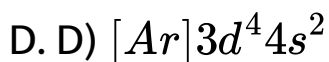
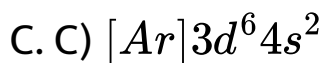
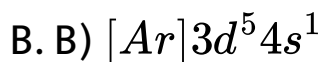
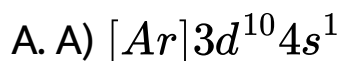
D. D) 40 minutes

Answer: B



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28. An improbable configuration is



Answer: D



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29. The absolute temperature of a gas is increases 3 times. The root - mean square velocity of the molecules will be

A. 3 times

B. 9 times

C. $\sqrt{3}$ times

D. $1/3$ times

Answer: C



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30. How will you be able to test sugar in a given sample of wine

- A. A) By Legal' effect
- B. B) By Dunstan's test
- C. C) By Biuret test
- D. D) By Molisch's test

Answer: D



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31. The function group present in cresol is

- A. Amino group
- B. Ketonic group
- C. Ether group
- D. Phenolic group

Answer: D



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32. Acetamide is treated separately with the following reagents. Which one of these gives methylamine



B. Sodium hypobromite



D. All of these

Answer: D



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33. HVZ reaction leads to the formation of

A. Chlorosubstituted acids

B. Formic acid

C. Oxalic acid

D. Acetic acid

Answer: A



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34. One mole of an organic compound requires 0.5 mole of oxygen to produce an acid. The compound may be

A. Aldehyde

B. Ether

C. Ketone

D. Alcohol

Answer: A



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35. 3-methyl-2 butanol on treatment with HCl gives predominantly

- A. 2, 2-dimethylpentane
- B. 2-chloro-3-methyl butane
- C. 2-chloro-2-methyl butane
- D. none of these.

Answer: C



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36. Number of acidic hydrogen in 1-butyne is

A. 3

B. 1

C. 4

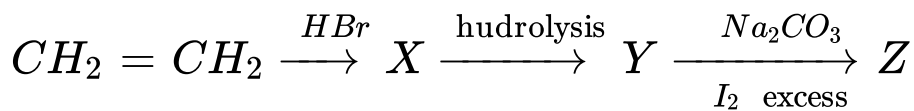
D. 2

Answer: B

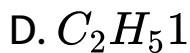
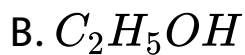


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37. Identify Z in the following series,



A. CH_3CHO

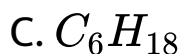
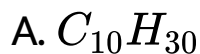


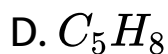
Answer: C



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38. Which formulae represents an alkane





Answer: B



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39. Which of the following acids shows stereoisomerism

- A. Formic acid
- B. Tartaric acid
- C. Acetic acid
- D. Oxalic acid

Answer: B



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40. The isomerism exhibited by n-butyl alcohol and isobutyl alcohol is

- A. Chain
- B. Positional
- C. Functional
- D. Metamerism

Answer: A



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41. When iron or zinc added to $CuSO_4$ solution copper is precipitated, it due to

A. Ionization of $CuSO_4$

B. Oxidation of Cu^{2+}

C. Reduction of Cu^{2+}

D. Hydrolysis of $CuSO_4$

Answer: C



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42. Which readily liberates I_2 from KI in acidic medium



Answer: B



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43. A substance X when heated with sulphuric acid liberates a gas which turns starch paper blue. The substance is



Answer: C



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44. By passing Na_2SO_3 to the solution of $K_2Cr_2O_7$, it turns green due to the formation of

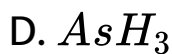
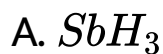
- A. Chromic sulphate
- B. Chromium sulphide
- C. K_2CrO_4
- D. None

Answer: A



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45. Which hydride is the strongest base ?

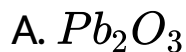


Answer: B



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46. The compound used in lead accumulators is



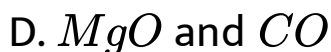
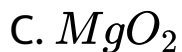
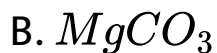


Answer: B



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47. Magnesium burns in CO_2 to form



Answer: A



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48. Solubility of $NaCl$ in heavy water is

- A. Same as in ordinary water
- B. Less the ordinary water
- C. More than ordinary water
- D. None of these

Answer: B



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49. Cinnabar is an ore of

A. *Cu*

B. *Hg*

C. *Zn*

D. *Pb*

Answer: B



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50. Which ion has the lower magnetic moment

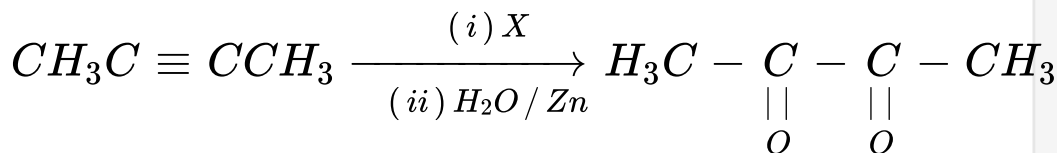


Answer: D



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51.



In the above reaction X is

A. HNO_3

B. O_3

C. O_2

D. $KMnO_4$

Answer: B



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52. Addition of HCN to ethyne in presence of $Ba(CN)_2$ as catalyst gives

A. 1, 1-dicyanoethane

B. Vinyl cyanide

C. Ethyl cyanide

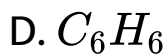
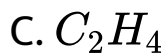
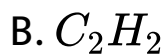
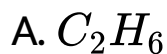
D. Diviny cyanide

Answer: B



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53. When treated with ammoniacal cuprous chloride, which one among the following forms copper derivative ?



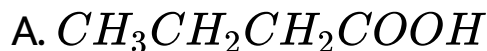
Answer: B



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54. 1-Butyne on treatment with hot alkaline

$KMnO_4$ gives

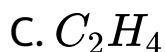


Answer: C



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55. A gas on passing through ammonical solution of $AgNO_3$ does not give any precipitate but decolourises alkaline $KMnO_4$ solution. The gas may be

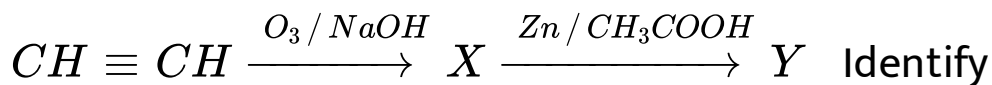


Answer: C

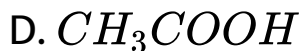
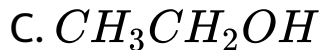
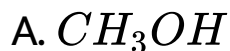


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56. In the reaction



'Y'

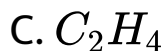


Answer: C



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57. Percentage of H_2 is maximum in



Answer: A



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58. Dry heating of a mixture of calcium acetate and calcium formate gives

A. $HCHO$

B. CH_3CH_2CHO

C. CH_3CHO

D. CH_3COCH_3

Answer: C



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59. Ammonium acetate reacts with acetic acid at $110^{\circ}C$ to give

A. Urea

B. Formamide

C. Acetic anhydride

D. Acetamide

Answer: D



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60. Which of the following compound is formed when formaldehyde is treated with $Ca(OH)_2$?

A. Methanol

B. Formose

C. Formic acid

D. Calcium formate

Answer: B



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