CHEMISTRY

BOOKS - ARIHANT PUBLICATION

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Section B Chemistry

1. The ground state electronic configuration of $_{24}Cr$ is

A. $[Ar]3d^5 4s^1$

B. $[Ar]3d^4 4s^2$

C. $[Ar]3d^3 4s^2 4p^1$

D. $[Ar]3d^6 4s^0$

Answer: A

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2. In a thermite process, the reduction of metallic oxides is done by

A. Al

B. Na

C. H_2

D. CO

Answer: A

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3. Covering of iron sheets with a layer of zinc is called

A. zinc plating

B. galvanising

C. tinning

D. electroplating

Answer: B

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4. The solubility of which among the following substances, decrease with rise in temperature?

A. NH_4Cl

B. KNO_3

C. $Na_2S_2O_3$

D. $Ca(OH)_2$

Answer: D

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5. The enzyme pepsin converts

A. proteins to amino acids

B. fats to fatty acids

C. glucose to ethyl alcohol

D. starch to glucose

Answer: A

6. Equal volumes of two solutions with pH=4 and pH = 10 are mixed. The pH of resulting solution will be

A. 3.5

B. 6.1

C. 7

D. 14

Answer: C

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7. The element with atomic number 50 is a member of

A. s-block

B. p-block

C. d-block

D. f-block

Answer: B

8. In a period of the periodic table as we move from left to right usually

A. atomic radlus decreases

B. lonisation potential increases

C. electron affinity decreases

D. electronegativity increases

Among the above statements, which one is false?

Answer: C

9. Which of the following acts as a catalyst in the hydrogenation of alkenes?

A. NI

B. Mn

C. MnO_2

D. V_2O_5

Answer: A

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10. ${}_{92}^{235}U$, ${}_{92}^{238}U$ and ${}_{92}^{239}U$ are

A. isomers

B. isotopes

C. isobars

D. Isotones

Answer: B

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11. The disaccharide present in milk is

A. amylose

B. lactose

C. sucrose

D. glucose

Answer: B

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12. Which of the following are isoelectronic?

$1 K^{+}$ $2. Ar$ $3. Cl^{-}$ $4. Ca^{+}$

A. 2 and 3

B. 3 and 4

C. 2 and 4

D. All of these

Answer: D

13. A bivalent metal has 37.2 equivalent weight.

The molecular weight of its chloride is

A. 216.6

B. 148.8

C. 145.4

D. 172.8

Answer: C

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14. Number of atoms present in 1.8g H_2O, $1.7gNH_3$ and $1.6gCH_4$ has the following sequence

A. $H_2O < NH_3 < CH_4$

B. $CH_4 < NH_3 < H_2O$

C. $CH_4 = NH_3 = H_2O$

D. $NH_3 < CH_4 < H_2O$

Answer: A

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15. X^+, Y^{2+} and Z^- ions are isoelectronic of CO_2. The sequence in number of protons in these ions will be

A. $X^+ = Y^{2+} = Z^-$

B. $X^+ < Y^{2+} < Z^-$

C. $Z^- < X^+ < Y^{2+}$

D. $Y^{2+} < X^+ < Z^-$

Answer: C

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16. Which of the following metals produce H_2 gas on reaction with cold water?

A. Hg

B. Sn

C. Al

D. Ca

Answer: D

17. Which of the following elements has maximum electronegativity?

A. F

B. Cl

C. Br

D. I

Answer: A

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18. Depletion of ozone layer is caused by

A. CO_2

B. Chloro fluorocarbons (CFCs)

C. CH_4

D. Oxides of S and N

Answer: B

19. The 'acid rain' which damages historical monuments is caused mainly by the presence of

A. CFCs (chloro fluoro carbons)

B. Oxides of S and N

C. CH_4

D. CO_2

Answer: B

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20. The 'global warming' is mainly due to which gas?

A. N_2O

B. O_2

C. CO

D. CO_2

Answer: D

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21. Which of the following statements are correct?

(1) Muscular contraction is a very fast process.

(ii) Reaction between $BaCl_2$ and H_2SO_4 is a fast process.

(iii) Rusting of iron is a slow process.

(iv) Rust of iron is $Fe_2O_3.xH_2O$

A. (i), (i) and (iii)

B. (ii), (iii) and (iv)

C. (i) and (iii)

D. All of these

Answer: D

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22. The ore of Al, 'bauxite' is

A. Al_2O_3

B. $Al_2O_3.\ H_2O$

C. $Al_2O_3.2H_2O$

D. Na_3AlF_6

Answer: C

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23. The main constituents of alloy 'brass' are

A. Al and Mg

B. Fe and Cr

C. Cu and Sn

D. Cu and Zn

Answer: D

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24. (v) An essential constituent of analgam is :

A. Al

B. Ag

C. Hg

D. Au

Answer: C

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25. 'Inert pair effect' is shown by

A. Tl

B. Pb

C. Bi

D. All of these

Answer: D

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26. Which of the following is a physical change?

A. Burning of a candle

B. Clotting of blood

C. Evaporation of water

D. Digestion of food

Answer: C

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27. Which of the following subshells is not possible?

A. 1s

B. 1p

C. 2s

D. 2p

Answer: B

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28. Which of the following will liberate Br_2 from KBr?

A. H_2

B. I_2

C. Cl_2

D. SO_2

Answer: C

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29. Fe, Mg and Co are present respectively, in

A. haemoglobin, myoglobin and chlorophyll

B. haemoglobin, chlorophyll and vitamin B_{12}

C. chlorophyll, vitamin B_{12} and myoglobin

D. vitamin B_{12}, haemoglobin and chlorophyll

Answer: B

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30. The amount of electricity required to deposit one mole of Al from a solution of $AlCl_3$ will be

A. 3.0 Faraday

B. 1.0 Faraday

C. 1.33 Faraday

D. 0.33 Faraday

Answer: A

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31. The modern periodic table is based on

A. mass number

B. molecular mass

C. atomic radius

D. atomic number

Answer: D

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32. Which of the following is a renewable source of energy?

A. Coal

B. Petroleum

C. Natural gas

D. Solar energy

Answer: D

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33. Among the following fuels, which has highest calorific value?

A. Blogas

B. Kerosene

C. Coal

D. Hydrogen gas

Answer: D

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34. Which of the following ores is concentrated by 'magnetic separation' process?

A. ZnS

B. $Al_2O_3.2H_2O$

C. Fe_3O_4

D. Fe_2O_3

Answer: C

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35. Which of the following non-metals is a liquid at room temperature?

A. Hg

B. Cl_2

C. Br_2

D. I_2

Answer: C

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36. Deficiency of which vitamin may lead to night blindness?

A. Vitanmin A

B. Vitamin B

C. Vitamin E

D. Vitamin K

Answer: A

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37. The number of σ and π bonds in a molecule of acetylene respectively, are

A. 3σ and 2π

B. 2σ and 3π

C. 5σ and 2π

D. 5σ and 3π

Answer: A

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38. On reaction with water, Al_4C_3 gives

A. methane

B. ethylene

C. acetylene

D. propene

Answer: A

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39. The base- sugar-phosphate unit present in the nucleic acid is called as

A. nucleoside

B. nucleotide

C. codon

D. gene

Answer: B

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40. Which of the following is strongest acid?

A. HOCl

B. $HClO_2$

C. $HClO_3$

D. $HClO_4$

Answer: D

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41. Among the following metals, which does not produce H_2 gas on reaction with dilute acids?

1. Zn 2. Al 3. Hg 4. Cu

A. Zn and Al

B. Zn and Hg

C. Hg and Cu

D. Hg and Al

Answer: C

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42. An element M having mass number 27 has 14 neutrons in its nucleus. The formula for oxide of this element will be

A. MO

B. M_2O

C. M_2O_3

D. MO_2

Answer: C

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43. Which solvent is often called a 'universal solvent'?

A. Bromine trifluoride

B. Water

C. Liquld ammonia

D. Liquid sulphur dioxide

Answer: B

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44. $M_{(g)} + e \rightarrow M^{-}_{(g)} + E$

In the above equation, E represents

A. electron affinity

B. electronegativity

C. first ionisation potential

D. second lonisation potential

Answer: A

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45. The crystal of KCl consists of

A. KCI molecules

B. K and Cl atoms

C. K and CI lons

D. molecules, atoms and ions.

Answer: C

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46. The water soluble vitamins are

A. B and C

B. A and H

C. B and D

D. A and D

Answer: A

47. Which of the following statements is incorrect?

A. Cellulose is a polymer of β- glucose

B. Proteins are polymers of amino acids

C. Terylene is a polyamide polymer

D. The monomer of Teflon polymer is tetrafluoro-ethylene

Answer: C

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48. Which of the following is used in fire extinguishers ?

A. CH_4

B. $CHCl_3$

C. CH_2Cl_2

D. CCl_4

Answer: D

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49. Energy of 1g Uranium is equal to

A. 9.0×10^{13}J

B. $9.0 \times 10^{19} J$

C. $3.0 \times 10^{16} J$

D. $3.0 \times 10^{17} J$

Answer: A

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50. The sodium nucleus $^{23}_{11}Na$ contains

A. 11 electrons

B. 12 protons

C. 23 protons

D. 12 neutrons

Answer: D