CHEMISTRY

BOOKS - PEARSON IIT JEE FOUNDATION

MOCK TEST

Question Choose The Correct Option

1. An atom .X. has a mass of protons 36,740 times that of electrons. Identify the correct

representa tion of the atom. The number of neutrons is 1 unit less than the protons.

A. ${}_{10}X^{20}$

B. ${}_{10}X^{22}$

C. ${}_{20}X^{40}$

D. ${}_{20}X^{39}$

Answer: D

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2. If .a. is the number of electrons in a dispositive ion and it has three neutrons more than the number of protons, identify the atomic number and mass number.

A. $a + 2, a + 5$

B. $a + 2, 2a + 7$

C. $a + 5, 2a + 7$

D. $a + 5, 2a + 5$

Answer: B

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3. Assuming that x is the mass of electron and y is the total mass of protons in ${}_8O^{18}$, which of the following equations is correct for calculating the total mass of protons?

A. $y = 18x - 10$

B. $8y = \frac{x}{1837}$

C. $\frac{y}{8} = 1837x$

D. $y = \frac{1837x}{18}$

Answer: C

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4. Which of the following corresponds to incorrect matches with respect to their formation?

(A) Dipositive ion $\rightarrow$ 2 electrons in valence shell in neutral atom.

(B) Unipositive ion $\rightarrow$ 7 electrons in valence shell in neutral atom.

(C) Trinegative ion $\rightarrow$ 3 electrons in valence

shell in neutral atom.

(D) Dinegative ion $\rightarrow$ 6 electrons in valence shell in neutral atom.

A. A and B

B. B and C

C. C and D

D. B and D

Answer: B

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5. Which of the following does not help to distinguish evaporation and boiling?

A. Temperature at which the phenomenon occurs

B. Portion of the liquid from which they occur

C. Change of state of matter

D. Speed at which they occur

Answer: C

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6. Good conductance of electricity is the characteristic of a _____.

A. metal

B. non-metal

C. metalloid

D. solid substance

Answer: A

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7. Which of the following liquids can conduct electricity in pure state?

A. Water

B. Mercury

C. Bromine

D. Benzene

Answer: B

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8. Which of the following is monoatomic?

A. Hydrogen

B. Chlorine

C. Helium

D. Nitrogen

Answer: C

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9. A non-metal .X. with electronic configurations 2, 4 forms two oxides in which .X. shows valencies two and four. Oxide with higher valency is dissolved in water. The acid so produced is treated with NaOH to form salt. What could be the formula of the salt?

A. $NaXO_3$

B. Na_2XO_3

C. $NaXO_4$

D. Na_2XO_4

Answer: B

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10. Both the metals .X. and .Y. can form two oxides in which their valencies differ by two units. What could be X and Y?

A. Cu, Fe

B. Fe, Pb

C. Pb, Sn

D. Sn, Cu

Answer: C

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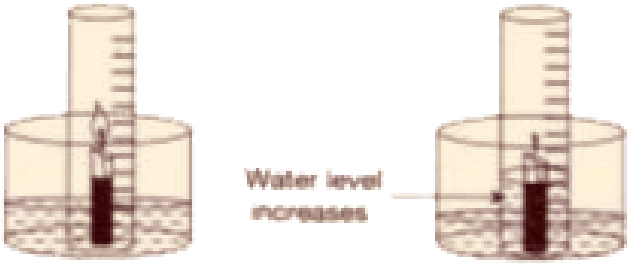
11. Which of the following is the conclusion drawn from the experiment given below?



A. Nitrogen is the major component of air.

B. CO_2 is present in air.

C. O_2 is one of the components of air.

D. One-fifth of the volume of air is oxygen.

Answer: D

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12. Which of the following processes does not con sume O_2?

A. Photosynthesis

B. Respiration

C. Burning of fuel

D. Rusting

Answer: A

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13. Under certain conditions, when a mixture of hydrogen and chlorine was exposed to sunlight, no reaction occurred. Which of the following reasons can be attributed to this?

A. Absence of moisture

B. Low intensity of sunlight

C. No reaction in presence of light energy

D. Presence of moisture in the reaction mixture

Answer: A

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14. Same amount of the same sample of water is taken in four different conditions. The amount of dis solved oxygen in all cases was analysed. Identify the correct order.

A. Hill station in summer

B. Sea level in summer

C. Sea level in winter

D. Deep sea in winter

Answer: B

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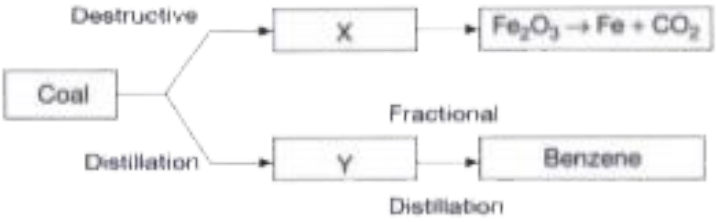
15. Observe the following flow chart and identify .X. and .Y..



A. Coal gas, coal tar

B. Coke, coal gas

C. Coke, coal tar

D. Ammonia, naphthalene

Answer: C

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16. If a saturated hydrocarbon has 4 carbon atoms, then the formula of the hydrocarbon could be _____.

A. C_4H_6

B. C_4H_8

C. C_4H_{10}

D. C_4H_{12}

Answer: C

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17. Identify true statements regarding rhombic sulphur and monoclinic sulphur.

A. Both are crystalline and insoluble in CS_2

.

B. Both are amorphous and soluble in CS_2.

C. Both are crystalline and soluble in CS_2.

D. Both are amorphous and insoluble in CS_2.

Answer: C

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18. Sugar, on treating with sulphuric acid, turns to a black coloured mass. The property of sulphuric acid exploited in this process is _____.

A. Acid nature

B. Oxidizing property

C. Dehydrating property

D. Bleaching property

Answer: C

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19. In which among the following reactions does H_2SO_4 show oxidizing property?

A. $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$

B. $C + 2H_2SO_4 \rightarrow 2H_2O + 2SO_2 + CO_2$

C. $2KOH + H_2SO_4 \rightarrow K_2SO_4 + 2H_2O$

D. $CuSO_4.5H_2O \rightarrow CuSO_4 + 5H_2O$

Answer: B

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20. Hydrogen sulphide, on combustion, gives sulphur and water. This reaction indicates the _____ of hydrogen sulphide.

A. acidic nature

B. basic nature

C. reducing property

D. oxidizing property

Answer: C

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Question

1. The maximum number of electrons in an orbit is 50. Identify the orbit corresponding to the above number of electrons.

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2. The neutral atom corresponding to a positive ion of an element has 2 incomplete shells. The sum of the electrons in the valence shell and the penulti mate shell is twice the number of electrons in the antepenultimate

shell. Calculate the atomic num ber of the element.

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3. Molecular mass of phosphate of divalent metal is 262. Find the atomic mass of the metal.

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4. The number of valence electrons present in noble gases is _____.

5. An atom of an element X.has the electronic con figuration a, a + b, 2(b - 1), and a. Identify the atomic number of the element.