Q1:

(A): Note that all the elements are in the same period (i.e. having the same number of electronic shell). The less the number of proteins (i.e. the atomic number) the larger the atomic radius. Therefore, $\boxed{B}$ has the largest atomic radius.

(B): The element with 6 outermost shell electrons becomes an anion of bivalenece easily. Hence the answer is $\boxed{O}$.

(C): The more the number of protons, the stronger the electric attration and hence the larger the electronegativity. Hence $\boxed{F}$ has the largest electronegativity.

Q2:

(1) and (2) can be rejected immediately as they are elements.

Compounds with an asymmetric molecule is polar.

Among (1) to (5), only $\boxed{H_2O}$ is polar.

Q3:

(A): The number of neutrons is equal to the mass number minus the number of protons. Therefore, there are 16-8=$\boxed{8}$ neutrons.

(B): The oxide ion has 10 electrons. Among the options, only $\boxed{Cl^-}$ has 18 electrons.

Q4:

The oxidation numbers are:

(1): +3

(2): +4

$\boxed{(3)}$: +7

(4): +6

(5): +5

Q5:

(A): Balancing the equation: $C_3H_8 + \boxed{5} O_2 \rightarrow 3CO_2 + 4H_2O$.

(B): When 2.24 L, i.e. $\frac{2.24}{22.4} = 0.1\ mol$ of propane is combusted,

$0.1 \cdot 2219 \approx \boxed{222\ kJ}$ of heat is released.

Q6:

When CH_2ClCH_2Cl is heated, HCl is released and $\boxed{CH_2 = CHCl}$ is obtained.

Q7:

(A): $\frac{\frac{2.0}{23.0+16.0+1.0}}{\frac{250}{1000}} = \boxed{0.2}\ mol/L.$

(B): pOH$=-\log[OH^-] = -\log 0.2 = 1 - \log 2 = 0.7.$

By pH+pOH=14, pH$=14 - 0.7 = \boxed{13.3}$.

(C): Number of moles of $OH^- = 0.2 \cdot \frac{50}{1000} = 0.01\ mol.$

Solving $0.5 \cdot \frac{V}{1000} = 0.01$, we have $V = \boxed{20}$.

Q8:

(A): By $pV = nRT$, $n = \frac{1.5 \cdot \frac{820}{1000}}{0.082 \cdot 300} = \boxed{0.05}\ mol.$

(B): By $pV = nRT$, $p = \frac{0.05 \cdot 0.082 \cdot 600}{\frac{1640}{1000}} = \boxed{1.5}\ mol.$

Q9:

(A): The name of $-COOH$ group is $\boxed{\text{carboxyl}}$.

(B): $-COOH$ group shows a $\boxed{\text{weak acid}}$ property.

Q10:

(A): The equation at the cathode is $Cu^{2+} + 2e^- \to Cu$.

By $Q = It$, $2.5 \cdot (25 \cdot 60 + 44) = 3860\ C = \frac{3860}{9.65 \times 10^4} = 0.04\ F$ of charges passed through the circuit.

Therefore, $\frac{1}{2} \cdot 0.04 = 0.02\ mol$, i.e. $0.02 \cdot 63.6 \approx \boxed{1.27}\ g$ of Cu has deposited on the cathode.

(B): The equation at the anode is $4OH^- \to 2H_2O + O_2 + 4e^-$.

Therefore, $\frac{1}{4} \cdot 0.04 = 0.01\ mol$, i.e. $22.4 \cdot 0.01 \approx \boxed{0.22}\ L$ of gas is generated.

Q11:

The equilibrium is $CH_3COOH + C_2H_5OH \iff CH_3COOC_2H_5 + H_2O$.

Considering the equilibrium constant,

$$\frac{x \cdot x}{(4.0 - x)(2.0 - x)} = 4$$

$$3x^2 - 24x + 32 = 0$$

$$x = \frac{24 - \sqrt{192}}{6} \approx \boxed{1.69}$$

Note: Another root 6.31 is rejected as there are no enough reactant.