Q1(A):

The atomic number of oxygen is 8. If an isotope of it contains 10 neutrons, the mass number of the isotope will be $8 + 10 = 18$.

The option matches this fact is $\boxed{(5)}$.

Q1(B):

As the oxidation number of O is -2, the oxidation number of S is $4 \cdot 2 - 2 = \boxed{+6}$.

Q1(C):

The number of electrons of Ar is 18.

The number of electrons of each options are:

(1): 10

(2): 10

$\boxed{(3)}$: 18

(4): 10 (5): 10

Q1(D):

The only sugar that does not show reducing property is $\boxed{\text{sucrose}}$.

Q1(E):

(1)-(3) are all addition polymers, which can be rejected immediately.

$\boxed{(4)}$ is a condensation polymer with ester linkage between monomers.

(5) is a condensation polymer with peptide linkage between monomers.

Q2:

(A): As 0.8 mol of ethylacetate is produced, 0.8 mol of reactants are consummed, i.e. 0.4 mol of reactants are remained.

$K_C = \frac{0.8 \cdot 0.8}{0.4 \cdot 0.4} = \boxed{4.0}$

(B): Let x be the number of moles of the ethanol added. By considering the equilibrium constant, we have

$$\frac{1.0 \cdot 1.0}{(0.4 - (1.0 - 0.8))(0.4 + x - (1.0 - 0.8))} = 4$$

$$x = \boxed{1.05}$$

Q3:

(A): $\frac{\frac{0.37}{40.0+16.0+1.0}}{\frac{500}{1000}} \approx \boxed{0.010\ mol/l}$.

(B): pOH$=-\log[OH^-] = -\log(0.010 \cdot 2) = 2 - \log 2$.

By pH+pOH=14, we have $pH = 12 + \log 2 \approx \boxed{12.3}$.

(C): Number of moles of OH^- ions$=0.010 \cdot \frac{100}{1000} \cdot = 0.002\ mol$.

Solving $0.002 = 0.01V$, we have $V = 0.2\ l = \boxed{200\ ml}$.

Q4:

(A): To burn 23.0 g, i.e. $\frac{23}{2\cdot 12.0+6\cdot 1.0+16.0} = 0.5\ mol$ of ethanol, $0.5 \cdot 1369 \approx \boxed{685\ kJ}$ of heat energy will be released.

Note: The question should be asking for the energy released instead. Otherwise the answer will be -685 kJ instead.

(B):

$$\Delta H_c[C_2H_5OH] = 3\Delta H_f[H_2O] + 2\Delta H_f[CO_2] - \Delta H_f[C_2H_5OH]$$

$$\Delta H_f[C_2H_5OH] = 1369 - 2 \cdot 394 - 3 \cdot 286 = -277\ kJ/mol$$

Therefore, the heat of formation is $\boxed{277\ kJ/mol}$

Q5:

(A): Due to the concentration effect, Cu^{2+} are reduced to Cu at the cathode and Cl^- are oxidised to Cl_2 at the anode $\boxed{(2)}$.

(B): The half equation is $2Cl^- \to Cl_2 + 2e^-$.

As 112 ml, i.e. $\frac{112\times 10^-3}{22.4} = 5 \times 10^{-3}\ mol$ of gas are generated, $2 \cdot 5 \times 10^{-3}\ F$, i.e. $10^{-2} \cdot 9.65 \times 10^4 = \boxed{965\ C}$ of electricity had flowed.

(C): By $Q = It$, $t = \frac{965}{2.5} = \boxed{386\ s}$.

Q6:

(A): The molar ratio $C : H : N = \frac{61.0}{12.0} : \frac{15.3}{1.0} : \frac{23.7}{14.0} \approx 3 : 9 : 1$.

Therefore, the empirical formula is C_3H_9N.

Solving $n(3 \cdot 12.0 + 9 \cdot 1.0 + 14.0) = 59$ for integer n, we have $n = 1$.

Therefore, the molecular formula is $\boxed{C_3H_9N}$.

(B): The compound is an straight amine with only single bonds and no other subtitutes.

Therefore, there are $\boxed{4}$ isomers:

Propan-1-amine, Propan-2-amine, ethylmethylamine, trimethylamine

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Q7:

Note that A and B are either alcohol or ether.

As A is readily oxidized, it is alcohol (1° or 2°).

As A has a chiral carbon, it is an asymmetric 2° alcohol.

The correction option is $\boxed{(5)}$.

Q8:

(A): $\rho = \frac{M}{V} = \frac{m_A}{22.4}$. Therefore, $m_A = 22.4 \cdot 0.90 \approx \boxed{20\ g/mol}$.

(B): By $pV = nRT$, $8.2 \cdot 6.0 = \frac{M}{2 \cdot 14.0} \cdot R \cdot (27 + 273)$, i.e. $M = \boxed{56\ g}$.