Q.1

Chemically aspirin is

Max. score: 2; Neg. score: 0; Your score: 2

- Sodium Salicylate
- Ethyl Salicylate
- Methyl Salicylate
- ✔ Acetyl salicylic acid

Q.2

Among the following, the correct statement(s) related to the iodometric titration that you have done is(are)

Max. score: 2; Neg. score: 0; Your score: 2

- ✔ The chemical reaction releasing iodine is generally slow and should be kept in dark for few minutes to complete it
- ✔ During the titration, starch indicator should be added only before the equivalence point
- ✔ Molecular iodine is only slightly soluble in water and thus liberates out of the flask if kept for long
- ✔ The chemical reaction releasing iodine proceeds quantitatively in slightly acidic solution.

Q.3

Caffeine is structurally similar to

Max. score: 2; Neg. score: 0; Your score: 2

- Thymine
- Tannin
- ✔ Adhenosine
- Guanine
- Cytosine

Q.4

The role of Papain extract in DNA extraction is

Max. score: 2; Neg. score: 0; Your score: 2

- (a) It disrupts the cell membrane
- (d) Both (a) and (b)
- (b) It emulsifies the lipids present in the cell membrane
- ✔ (c) It denatures and degrades the proteins

Q.5

Caffeine belongs to the class of

Max. score: 2; Neg. score: 0; Your score: 2

- Steroids
- Terpenoids
- Carbohydrates
- ✔ Alkaloids

Q.6

Among the following, the correct statement(s) related to your experiment 'determination of the amount of calcium in milk powder by EDTA complexometry' is(are):

Max. score: 2; Neg. score: 0; Your score: 0

- EDTA reacts first with free calcium and then to the Mg-indicator complex
- ✔ Mg-EDTA complex is less stable than Ca-EDTA complex
- Eriochrome black-T used is an acid-base indicator
- ✔ Mg-indicator complex is more stable than Ca-indicator complex
- ✔ The point at which the reaction (titration) complete is known as the equivalence point

Q.7

Aspirin on treatment with aq. $FeCl_3$ solution gives

Max. score: 2; Neg. score: 0; Your score: 2

- Purple colour Metal complex
- Red Colour Metal complex
- Deep Blue colour Metal complex
- ✔ No colour Change

Q.8

Among the following, the correct statement(s) related to your experiment 'determination of the amount of calcium in milk powder by EDTA complexometry' is(are):

Max. score: 2; Neg. score: 0; Your score: 2

- ✔ ■ You need to use a buffer solution containing ammonia and ammonium chloride in the experiment
- ✔ ■ For an indicator to be useful in the experiment, it must bind metal less strongly than EDTA does
- ☐ Magenta and blue colours are formed due to free eriochrome black-T indicator and metal-indicator complex, respectively
- ✔ ■ You can get the combined calcium and magnesium amount present in the milk powder
- ☐ You can get only the amount of calcium but not magnesium present in the milk

Q.9

The complementary base pairs in the DNA are

Max. score: 2; Neg. score: 0; Your score: 2

- ✔ ■ Adenine-Thymine and Guanine-Cytosine
- ☐ Guanine-Thymine and Cytosine-Adenine
- ☐ Uracil-Thymine and Guanine-Cytosine
- ☐ Cytosine-Thymine and Guanine-Adenine

Q.10

Some of the chemical reactions are shown below:

$IO_3^- + \mathbf{A} + H^+ \rightarrow I_2 + H_2O$

$NaNO_2 + H_2SO_4 \rightarrow \mathbf{B} + Na_2SO_4$

$\mathbf{B} + I^- \rightarrow \mathbf{C} + NO + H_2O$

$I_3^- + S_2O_3^{2-} \rightarrow \mathbf{D} + \mathbf{E}$

The **A**, **B**, **C**, **D** and **E** from the above equations are, respectively:

Max. score: 2; Neg. score: 0; Your score: 2

- ✔ I^-, HNO_2, I_2, I^-, $S_4O_6^{2-}$
- I^-, HNO_3, I_2, I^-, $S_4O_6^{2-}$
- I^-, HNO_2, I_2, I^-, $S_4O_6^-$
- I^-, HNO_3, I_2, IO_3^-, $S_4O_6^-$