Chemistry Subject

Q.1 Which element is commonly found in Group 7 of the periodic table?

A) Oxygen
B) Fluorine
C) Nitrogen
D) Chlorine

Q.2 What functional group is present in an aldehyde?

A) -OH
B) -COOH
C) -CHO
D) -NH2

Q.3 What is the ideal gas law equation?

A) $PV=nRT$
B) $E=mc^2$
C) $F=ma$
D) $E=h\nu$

Q.4 Which technique is commonly used to separate and analyze components of a mixture based on their molecular weight?

A) Gas Chromatography
B) Mass Spectrometry
C) Nuclear Magnetic Resonance
D) High-Performance Liquid Chromatography

Q.5 What is the primary function of enzymes in biological systems?

A) Structural support
B) Energy storage
C) Catalyzing chemical reactions
D) Transport of molecules

Q.6 Which element is commonly used as a reducing agent in chemical reactions?

A) Sodium
B) Oxygen
C) Hydrogen
D) Chlorine

Q.7 What type of reaction converts an alkene into an alkane?

A) Hydrogenation
B) Dehydration
C) Esterification
D) Saponification

Q.8 What does the term "enthalpy" represent in a thermodynamic system?

A) Heat content
B) Pressure
C) Volume
D) Entropy

Q.9 Which biomolecule is composed of amino acids and plays a crucial role in cellular structure and function?

A) Lipids
B) Proteins
C) Carbohydrates
D) Nucleic acids

Q.10 Which method is used for the qualitative and quantitative analysis of elements in a sample based on the emission of characteristic X-rays?

A) Atomic Absorption Spectroscopy
B) Mass Spectrometry
C) X-ray Fluorescence Spectroscopy
D) Infrared Spectroscopy

Chemistry Subject

1. D) Chlorine
2. C) -CHO
3. A) PV=nRT
4. D) High-Performance Liquid Chromatography
5. C) Catalyzing chemical reactions
6. C) Hydrogen
7. A) Hydrogenation
8. A) Heat content
9. B) Proteins
10. C) X-ray Fluorescence Spectroscopy

Analytical Reasoning

Q.1 Use the information provided to solve the logic puzzle.

Four friends – Alex, Blake, Chris, and Dana – each have a different favorite color: Red, Blue, Green, and Yellow. Use the clues to determine each person's favorite color.

A) Alex's favorite color is not Red.
B) Blake likes Green.
C) Chris does not like Blue.
D) Dana's favorite color is not yellow.

Question: What is Alex's favorite color?

A) Red
B) Blue
C) Green
D) Yellow
E) Red and Blue

Q.2 Study the table below and answer the question.

Country	Population (millions)	GDP per capita ($)
A	80	15,000
B	120	20,000
C	50	25,000

Question: Which country has the highest total GDP?

A) Country A
B) Country B
C) Country C
D) Country D
E) None

Q.3 Use the information provided to solve the logic puzzle.

Five friends – Emma, Jack, Lisa, Mike, and Sarah – each brought a different type of dessert to a party: Cake, Pie, Cookies, Ice Cream, and Brownies. Use the clues to determine which friend brought which dessert.

A) Emma brought Cake.

B) Jack did not bring Pie or Ice Cream.

C) Lisa brought Brownies.

D) Mike brought Cookies.

E) Sarah did not bring Cake.

Question: What dessert did Jack bring?

A) Pie
B) Cookies
C) Ice Cream
D) Brownies
E) Jellies

Q.4 Study the bar chart below and answer the question.

Question: Which product had the highest sales in Month 3?

A) Product A
B) Product B
C) Product C
D) Product D
E) Product E

Q.5 Use the information provided to solve the logic puzzle.

Five colleagues – Alice, Bob, Carol, David, and Emily – each have a different profession: Doctor, Lawyer, Engineer, Artist, and Scientist. Use the clues to determine each person's profession.

A) Alice is not a Doctor.

B) Bob is either a Lawyer or an Engineer.
C) Carol is not an Artist.
D) David is not a Scientist.
E) Emily is a Doctor.

Question: What is Bob's profession?

A) Lawyer
B) Engineer
C) Artist
D) Scientist
E) Doctor

Q.6 Study the line graph below and answer the question.

Question: In which year did the Company B stock have the highest value?

A) 2018
B) 2019
C) 2020
D) 2023
E) 2021

Q.7 Use the information provided to solve the logic puzzle.

Five friends – Alex, Blake, Chris, Dana, and Emma – each have a different pet: Dog, Cat, Rabbit, Fish, and Bird. Use the clues to determine each person's pet.

A) Alex does not have a Dog.
B) Blake has a Cat.
C) Chris has a Fish.
D) Dana does not have a Rabbit.
E) Emma has a Bird.

Question: What is Dana's pet?

A) Dog
B) Cat
C) Rabbit
D) Fish
E) Bird

Q.8 Study the scatter plot below and answer the question.

Question: What is the relationship between the X and Y variables?

A) Positive correlation
B) Negative correlation
C) No correlation
D) No Relation
E) Both A&B

Q.9 Use the information provided to solve the logic puzzle.

Five students – Alice, Bob, Carol, David, and Emily – each have a different favorite subject: Math, English, Science, History, and Art. Use the clues to determine each student's favorite subject.

- Alice's favorite subject is not English or Science.
- Bob likes Math.
- Carol's favorite subject is not History.
- David's favorite subject is Art.
- Emily's favorite subject is not Science or History.

Question: What is Carol's favorite subject?

A) Math
B) English
C) Science
D) History

Q.10 Study the pie chart below and answer the question.

Question: What percentage of the total budget is allocated to Education?

A) 20%
B) 25%
C) 30%
D) 40%
E) 45%

Answers:

<u>Analytical Reasoning</u>

01.   C)Green
02.   B)Country B
03.   B) Cookies
04.   B)Product B
05.   A)Lawyer
06.   B)2019
07.   C)Rabbit
08.   A)Positive correlation
09.   C)Science

10. B)25%