

PGT Chemistry

Q 1). Which Indian state is planning to launch a massive jungle safari project in the Aravalli Hills, aimed at promoting eco-tourism and sustainable development?

- (A) Rajasthan
- (B) Gujarat
- (C) Madhya Pradesh
- (D) Haryana

Correct Answer: (D)

Q 2). Prime Minister Modi had accorded a ceremonial welcome during his recent visit to Croatia at _____.

- (A) St. Mark's Church
- (B) Croatian Parliament
- (C) Banski Dvori Palace
- (D) Zagreb City Hall

Correct Answer: (C)

Q 3). Which of the following countries were recently elected to serve as a non-permanent member of the UN Security Council for a two-year term starting in January 2026?

1. Bahrain, Colombia, Latvia
2. Indonesia, Sri Lanka, Vietnam
3. Liberia, The Democratic Republic of Congo

- (A) 1, 2 & 3
- (B) 1 & 3
- (C) Only 2
- (D) 1 & 2

Correct Answer: (B)

Q 4). "How many characters are there in the story?" This question is of _____ level as per the revised Bloom's Taxonomy.

- (A) remembering
- (B) evaluation
- (C) understanding
- (D) application

Correct Answer: (A)

Q 5). Which of the following is an example of positive reinforcement as per child psychology?

- (A) Giving a child a time-out for misbehavior.
- (B) Praising a child for completing homework.
- (C) Removing TV privileges for poor grades.
- (D) Ignoring a child's tantrum.

Correct Answer: (B)

Q 6). As per NEP 2020, what is the proposed bagless period for students in Grades 6-8 in a year?

- (A) 5 days
- (B) 10 days
- (C) 15 days
- (D) 20 days

Correct Answer: (B)

Q 7). Which of the following compounds give positive Beilstein Test?

- (A) Chlorobenzene
- (B) Benzoic Acid
- (C) Salicylic acid
- (D) Acetophenone

Correct Answer: (A)

Q 8). Which of the following is correct for “Exothermic” processes?

- (A) It absorbs energy.
- (B) It gives off energy.
- (C) It has no energy change.
- (D) It is impossible to predict the energy change of an exothermic process.

Correct Answer: (B)

Q 9). What is the oxidation state of Al in $[\text{AlCl}(\text{H}_2\text{O})_5]^{+2}$?

- (A) +1
- (B) +3
- (C) -1
- (D) +2

Correct Answer: (B)

Q 10). In which types of mixtures or substances is the Tyndall effect observed?

- (A) Solution
- (B) Colloid
- (C) Suspension
- (D) Pure substance

Correct Answer: (B)

Q 11). In multiple-electron atom, which of the following orbitals described by three quantum numbers will have the same energy in the absence of magnetic and electric fields?

- (i). $n = 1 ; l = 0 ; m = 0$
- (ii). $n = 2 ; l = 0 ; m = 0$
- (iii). $n = 2 ; l = 1 ; m = 2$
- (iv). $n = 3 ; l = 2 ; m = 1$
- (v). $n = 3 ; l = 2 ; m = 0$

- (A) (i) and (ii)
- (B) (ii) and (iii)
- (C) (iii) and (iv)
- (D) (iv) and (v)

Correct Answer: (D)

Q 12). As per IUPAC nomenclature, the name of the complex $[\text{Co}(\text{H}_2\text{O})_4(\text{NH}_3)_2]\text{Cl}_3$ is _____.

- (A) Tetraaquadiaminecobalt (III) chloride
- (B) Tetraaquadiammincobalt (III) chloride
- (C) Diaminetetraaquacobalt (III) chloride
- (D) Diamminetetraaquacobalt (III) chloride

Correct Answer: (D)

Q 13). Hydrogen gas is not evolved when a metal reacts with which of the following?

- (A) Water
- (B) HNO_3
- (C) Dilute HCl
- (D) Dilute H_2SO_4

Correct Answer: (B)

Q 14). The reaction between Haloalkanes with KCN and AgCN forms different products.

Choose the correct option that contains the products and the reason for different products.

- (A) KCN is ionic, AgCN is covalent and the products are alkyl cyanides and isocyanides.
- (B) KCN is covalent, AgCN is ionic and the products are isocyanides and alkyl Cyanides.
- (C) KCN is ionic, AgCN is covalent and the products are isocyanides and alkyl cyanides.
- (D) KCN is covalent, AgCN is ionic and the products are alkyl cyanides and isocyanides.

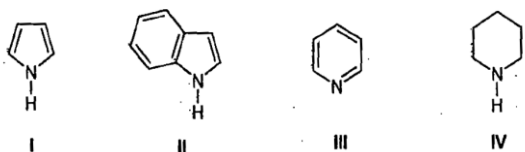
Correct Answer: (A)

Q 15). The number of molecules in 18 grams of water is _____.

- (A) 6.022×10^{23}
- (B) 3.011×10^{23}
- (C) 1.204×10^{24}
- (D) 4.811×10^{22}

Correct Answer: (A)

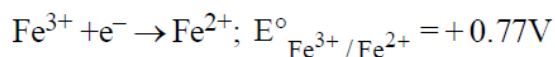
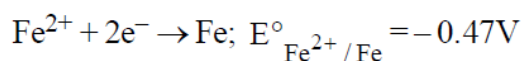
Q 16). Choose the correct order of the basicity of the following compounds from the given options.



- (A) $\text{IV} > \text{III} > \text{II} > \text{I}$
- (B) $\text{III} > \text{IV} > \text{II} > \text{I}$
- (C) $\text{IV} > \text{III} > \text{I} > \text{II}$
- (D) $\text{III} > \text{IV} > \text{I} > \text{III}$

Correct Answer: (A)

Q 17). What is the standard reduction potential (E°) for $\text{Fe}^{3+} \rightarrow \text{Fe}$?



(A) -0.057 V

(B) $+0.057\text{ V}$

(C) $+0.30\text{ V}$

(D) -0.30 V

Correct Answer: (A)

Q 18). For which order reaction, the rate constant is equal to the rate of reaction at all concentrations?

(A) Zero order

(B) First order

(C) Second order

(D) Third order

Correct Answer: (A)

Q 19). If a certain first order reaction has a half-life of 40.0 minutes, the rate constant for this reaction would be _____.

(A) 0.015 min^{-1}

(B) 0.016 min^{-1}

(C) 0.017 min^{-1}

(D) 0.020 min^{-1}

Correct Answer: (C)

Q 20). In the question below, there are two statements marked as Statements-1 and Statements-2. Read the both statements carefully and choose the correct option.

Statement-1: For every chemical reaction at equilibrium, standard Gibbs energy of reaction is zero.

Statement-2: At constant temperature and pressure, chemical reactions are spontaneous in the direction of decreasing Gibbs energy.

(A) Statement-1 and Statement-2 are True, Statement-2 is a correct explanation for Statement-1.

(B) Statement-1 and Statement-2 are True, Statement-2 is not a correct explanation for Statement-1.

(C) Statement-1 is True, Statement-2 is False

(D) Statement-1 is False, Statement-2 is True.

Correct Answer: (D)