

PART 1 - CHEMISTRY

Topic : Electrochemistry

SECTION-1 : (Maximum Marks : 4)

- This section contains **ONE** question.
- Each question has **FOUR** options (A), (B), (C) and (D). **ONE OR MORE THAN ONE** of these four option(s) is(are) correct answer(s).
- For each question, choose the option(s) corresponding to (all) the correct answer(s).
- Answer to each question will be evaluated according to the following marking scheme :
Full Marks : +4 ONLY if (all) the correct option(s) is(are) chosen;
Partial Marks : +3 If all the four options are correct but ONLY three options are chosen;
Partial Marks : +2 If three or more options are correct but ONLY two options are chosen, both of which are correct;
Partial Marks : +1 If two or more options are correct but ONLY one option is chosen and it is a correct option;
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);
Negative Marks : -2 In all other cases.
- For example, in a question, if **(A), (B) and (D)** are the ONLY three options corresponding to correct answers, then choosing ONLY (A), (B) and (D) will get +4 marks; choosing ONLY (A) and (B) will get +2 marks; choosing ONLY (A) and (D) will get +2 marks; choosing ONLY (B) and (D) will get +2 marks; choosing ONLY (A) will get +1 mark; choosing ONLY (B) will get +1 mark; choosing ONLY (D) will get +1 mark; choosing no option (i.e. the question is unanswered) will get 0 marks; and choosing any other combination of options will get -2 marks.

1. An aqueous solution of hydrazine (N_2H_4) is electrochemically oxidized by O_2 , thereby releasing chemical energy in the form of electrical energy. One of the products generated from the electrochemical reaction is $\text{N}_2(\text{g})$.

Choose the correct statement(s) about the above process

[JEE Advanced 2024 Paper 2]

- (A) OH^- ions react with N_2H_4 at the anode to form $\text{N}_2(\text{g})$ and water, releasing 4 electrons to the anode.
(B) At the cathode, N_2H_4 breaks to $\text{N}_2(\text{g})$ and nascent hydrogen released at the electrode reacts with oxygen to form water.
(C) At the cathode, molecular oxygen gets converted to OH^- .
(D) Oxides of nitrogen are major by-products of the electrochemical process.

Scan or tap for the full solution



Space for Rough Work

Test Pattern : **JEE (Advanced)**

SECTION-1

[illegible]