PART 1 - PHYSICS

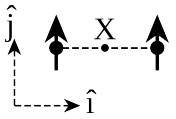
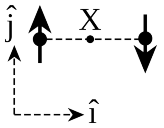
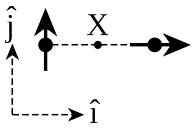
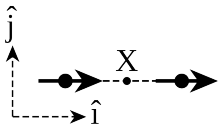
Topic : Electric charges and fields

SECTION–1 : (Maximum Marks : 4)

- This section contains **ONE** question.
- Each question has **TWO** lists: **List-I** and **List-II**.
- Four options are given representing matching of elements from List-I and List-II. **ONLY ONE** of these four options corresponds to a correct matching.
- For each question, choose the option corresponding to the correct answer.
- Answer to each question will be evaluated according to the following marking scheme :

Full Marks	: +4	If ONLY the correct option is chosen;
Zero Marks	: 0	If none of the options is chosen (i.e. the question is unanswered);
Negative Marks	: −1	In all other cases.

1. **List-I** shows four configurations, each consisting of a pair of ideal electric dipoles. Each dipole has a dipole moment of magnitude p, oriented as marked by arrows in the figures. In all the configurations the dipoles are fixed such that they are at a distance 2r apart along the x direction. The midpoint of the line joining the two dipoles is X. The possible resultant electric fields $\vec{E}$ at X are given in **List-II**.

	List-I		List-II
P.		1.	$\vec{E} = 0$
Q.		2.	$\vec{E} = -\frac{p}{2\pi\varepsilon_0 r^3}\hat{j}$
R.		3.	$\vec{E} = -\frac{p}{4\pi\varepsilon_0 r^3}(\hat{i} - \hat{j})$
S.		4.	$\vec{E} = \frac{p}{4\pi\varepsilon_0 r^3}(2\hat{i} - \hat{j})$
		5.	$\vec{E} = \frac{p}{\pi\varepsilon_0 r^3}\hat{i}$

Choose the option that describes the correct match between the entries in List-I to those in List-II.

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(A) P → 3, Q → 1, R → 2, S → 4
(B) P → 4, Q → 5, R → 3, S → 1
(C) P → 2, Q → 1, R → 4, S → 5
(D) P → 2, Q → 1, R → 3, S → 5

Scan or tap for the full solution

Space for Rough Work

JEE ADVANCED ELECTRIC CHARGES AND FIELDS — ELECTRIC DIPOLE: FIELD ON AXIS AND EQUATOR — PYQS

Test Pattern : **JEE (Advanced)**

ANSWER KEY

SECTION–1																													
Ques.	1																												
Ans.	**C**																												