

PART 1 - PHYSICS

Topic : Electric charges and fields

SECTION-A : (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.	$\vec{E} = -\frac{p}{2\pi\epsilon_0 r^3} \hat{j}$
R.		3.	$\vec{E} = -\frac{p}{4\pi\epsilon_0 r^3} (\hat{i} - \hat{j})$
S.		4.	$\vec{E} = \frac{p}{4\pi\epsilon_0 r^3} (2\hat{i} - \hat{j})$
		5.	$\vec{E} = \frac{p}{\pi\epsilon_0 r^3} \hat{i}$

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

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

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-A																									
Ques.	1																								
Ans.	C																								