SECTION-A

1. A point charge situated at a distance 'r' from a short electric dipole on its axis, experiences a force	$ec{F}$. If the distance of
the charge is $2r$, the force on the charge will be:	1

- (a) $\frac{\vec{F}}{16}$
- (c) $\frac{\vec{F}}{4}$
- (d) $\frac{\vec{F}}{2}$

the charg	ge is $2r$, the force on the charge will be:
(a) $\frac{\vec{F}}{16}$	(b) $\frac{\vec{F}}{8}$ (c) $\frac{\vec{F}}{4}$ (d) $\frac{\vec{F}}{2}$
1. Sol.	(b) · <u>F</u>
	8
	Explanation :- Electric field on a dipole at
	Explanation: Electric field on a dipole at an axial point is given by
	E= 1 2P 4T180 83
	47180 h3
	where, Pis the dipole moment.
	I is the charge which is placed at
	9 is the charge which is placed at a distance r from the dipole.
	Force on charge 9 is
	F = 9E = 1 2P9
	Force on charge $\frac{9}{F} = \frac{1}{9} = \frac{2}{9} = \frac{2}{9} = \frac{1}{9} = \frac{1}{9} = \frac{2}{9} $
	when the distance is doubled
	R'=2R
	F'= 1 2P9
	4TEO (29)3
	F'= 1 2P9_
	4TE. 823
	F'= 1 [1 2Pq \ 8 4TE0 83
	8 4TEO 23
	F'=F
	8