

INDIAN SCHOOL MUSCAT

NAME OF THE EXAMINATION	SECOND PERIODIC TEST	CLASS: XII
DATE OF EXAMINATION	29.05.2022	SUBJECT: PHYSICS
TYPE- SET A	MARKING SCHEME	

SET	Q.NO	VALUE POINTS	MARK
A	1	At the point of intersection, there will be two different directions of electric field OR two values of potential which is not possible	2
	2	<u>Yes</u> , electric potential is zero at all points on equatorial line of electric dipole, while electric field strength is not zero.	1+1
	3	$V = 6 \frac{kq}{r}$ $= 6 \times 9 \times \frac{10^9 \times 6 \times 10^{-6}}{0.1}$ $= 324 \times 10^4 \text{ V}$	$\frac{1}{2}$ $\frac{1}{2}$ 1
	4	Definition – equipotential surface Diagram of equipotential surfaces corresponding to (i) a constant electric field in the x- direction. (ii) a field that uniformly increases in magnitude in the x-direction. Note- If direction of electric field is not mentioned in the diagram- deduct $\frac{1}{2}$ marks	1 1 1
	5	If $r = 1\text{m}$, calculated – Give $\frac{1}{2}$ marks $V = V_A + V_B + V_C + V_D$ (Substitution and calculation) $= 2.7 \times 10^4 \text{ V}$ Note- If $r = 1\text{m}$, calculated – Give $\frac{1}{2}$ marks	$\frac{1}{2}$ 1 +1 1
	6	Gauss's theorem of electrostatics statement Note -If only formula given- give $\frac{1}{2}$ marks expression for the electric field due to a uniformly charged spherical shell. Introduction and Diagram Derivation	1 1 1
	7	(1) c) Scalar quantity (2) (c) $\frac{q}{6\epsilon_0}$ (3) (d) ϵ_0^{-1} (4) (b) zero (5) (a) $0.1 \text{ N m}^2 \text{C}^{-1}$	1 1 1 1 1