

INDIAN SCHOOL MUSCAT

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

<b>B</b>	1	Yes Inside a uniformly charged spherical shell electric field is zero but electric potential cannot be zero.  OR Between the line joining two similar charges of equal magnitude.	1  1
	2	Electric potential Scalar quantity	1 1
	3	(i) Electric flux = $\frac{-2Q}{\epsilon_0}$ (ii) Zero	1 1
	4	Gauss's theorem of electrostatics statement <b>Note -If only formula given- give 1/2 marks</b>  Expression for the electric field due to a uniformly charged infinite plane sheet of surface charge density $\sigma$ . Introduction and diagram Derivation	1  1 1
	5	(i) Explanation for the reason of electrostatic field be normal to the surface at every point of a charged conductor. (ii) Equipotential surfaces corresponding to a single positive charge at the origin.	2  1
	6	(i) $V = \frac{kq}{r} = \frac{9 \times 10^9 \times 8 \times 10^{-7}}{0.09} = 8 \times 10^4 \text{ V}$ (ii) $W = qV = 32 \times 10^{-5} \text{ J}$ No, work done is path independent	1/2 + 1/2 1/2 + 1/2 1/2 + 1/2
	7	(1) (c) $\frac{q}{6\epsilon_0}$ (2) c) Scalar quantity (3) (a) $0.1 \text{ N m}^2 \text{ C}^{-1}$ (4) (d) $\epsilon_0^{-1}$ (5) (b) zero	1 1 1 1 1