INDIAN SCHOOL MUSCAT

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

C	1	Electric potential Scalar quantity	1 1
	2	$V = 6\frac{kq}{r}$ $= 6 \times 9 \times \frac{10^9 \times 8 \times 10^{-6}}{0.1}$ $= 432 \times 10^4$ V	½ ½ 1
	3	Yes, Inside a uniformly charged spherical shell electric field is zero but electric potential cannot zero. **OR** Between the line joining two similar charges of equal magnitude.	1 +1
	4	Gauss's theorem of electrostatics statement Expression for the electric field due to a straight uniformly charged infinite line of charge density λ C/m. Introduction and diagram Derivation	1 1 1
	5	(i) $V = \frac{kq}{r} = \frac{9 \times 10^9 \times 24 \times 10^{-6}}{0.2} = 1.08 \times 10^6$ V (ii) $V = 1.08 \times 10^6$ V	½ +½ 1
	6	(i) Definition of equipotential surface (ii) Plane perpendicular and passing through the mid-point of the electric dipole (iii) Opposite to the direction of the dipole moment and perpendicular to the equipotential surface. **Note- Give full credit for diagram representation**	1 1 1
	7	(1) (d) ε_0^{-1} (2) (a)$0.1\ N\ m^2 C^{-1}$ (3) (c) $\frac{q}{6\varepsilon_0}$ (4) c) Scalar quantity (5) (b) zero	1 1 1 1 1