

# PYQSide

## NEET ELECTRIC CHARGES AND FIELDS — APPLICATIONS OF GAUSS'S LAW (LINE, SHEET, SHELL) — PYQS

Max. Marks: 16

Questions: 4

### Section A (MCQ)

- Q.1** A spherical conductor of radius 10 cm has a charge of  $3.2 \times 10^{-7}$  C distributed uniformly. What is the magnitude of electric field at a point 15 cm from the centre of the sphere?

$$\left( \frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ N m}^2/\text{C}^2 \right) \quad [\text{NEET (UG) 2020}]$$

- (1)  $1.28 \times 10^5$  N/C      (2)  $1.28 \times 10^6$  N/C  
(3)  $1.28 \times 10^7$  N/C      (4)  $1.28 \times 10^4$  N/C

Scan or tap for the  
full solution



- Q.2** A hollow metal sphere of radius R is uniformly charged. The electric field due to the sphere at a distance r from the centre : [NEET (UG) 2019]

- (1) zero as r increases for  $r < R$ , decreases as r increases for  $r > R$   
(2) zero as r increases for  $r < R$ , increases as r increases for  $r > R$ .  
(3) decreases as r increases for  $r < R$  and for  $r > R$ .  
(4) increases as r increases for  $r < R$  and for  $r > R$ .

Scan or tap for the  
full solution



- Q.3** Two parallel infinite line charges with linear charge densities  $+\lambda$  C/m and  $-\lambda$  C/m are placed at a distance of 2R in free space. What is the electric field mid-way between the two line charges?

[NEET (UG) 2019]

- (1)  $\frac{2\lambda}{\pi\epsilon_0 R}$  N/C      (2) zero  
(3)  $\frac{\lambda}{\pi\epsilon_0 R}$  N/C      (4)  $\frac{\lambda}{2\pi\epsilon_0 R}$  N/C

Scan or tap for the  
full solution



- Q.4** The electric field at a distance  $\frac{3R}{2}$  from the centre of a charged conducting spherical shell of radius R is E. The electric field at a distance  $\frac{R}{2}$  from the centre of the sphere is [AIPMT 2010 (Mains)]

- (1) zero      (2) E      (3)  $\frac{E}{2}$       (4)  $\frac{E}{3}$

Scan or tap for the  
full solution



### ANSWER KEY

| Ques. | 1 | 2 | 3 | 4 |  |  |  |  |  |  |  |  |  |  |
|-------|---|---|---|---|--|--|--|--|--|--|--|--|--|--|
| Ans.  | 1 | 1 | 3 | 1 |  |  |  |  |  |  |  |  |  |  |