

CLASS 12



RBSE BOARD ZONE PREVIOUS YEAR QUESTIONS

CHAPTER-WISE

Physics

ALL QUESTIONS OF LAST 12 YEAR'S OF RAJASTHAN BOARD

- Available For Hindi & English Medium
- Questions From 2013-2024
- RBSE Examination 2024-25
- Based on Rationalised NCERT 2023-24
- ALL Repeated Questions Are Mentioned

Maniesh Kr Sah



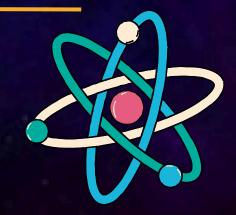












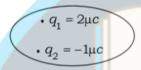
ELECTRIC CHARGES AND FIELDS

1. Write any two properties of electric field lines.

[1M]

(RBSE 2013)

2. Write the statement of Gauss' law for electrostatics. Draw a diagram and derive an expression for electric field due to a uniformly charged infinite plane sheet at a point near the sheet. In the given diagram write the value of electric flux passing from the surface.



[4 MARKS]

(RBSE 2013,2019,2023)

3. Define electric flux. Apply Gauss' law to obtain an expression for the electric field intensity at a point due to an infinitely long uniformly charged straight wire. Draw the necessary diagram. [4M] (RBSE 2014,2017)

4. Write the statement of Gauss's law.

[1M]

(RBSE 2015, RBSE 2013, RBSE 2016, RBSE 2019, RBSE 2022)

5. (a) Derive a relation for electric field due to an electric dipole at a point on the equatorial plane of the electric dipole. Draw necessary diagram.

(b) An electric dipole of charge ± 1 μ C exists inside a spherical Gaussian surface of radius 1 cm. Write the value of outgoing flux from the Gaussian surface. [3M]

(RBSE 2015)

6. Write the definition of electric dipole moment.

[1M]

(RBSE 2019, RBSE 2016)

7. Write the statement of gauss's law. Determine an expression for the electric field intensity at a point due to an infinitely long uniformly charged straight wire. Draw the necessary diagram. [4M] (RBSE 2016)

8. State Gauss law in electrostatics. Derive an expression of electric field due to an infinitely long straight uniformly charged wire. Draw necessary diagram. [1+2+1=4M]

(RBSE 2017, RBSE 2014)

9. Write definition of electric field intensity. Obtain an expression for electric force and electric pressure on the surface of a charged conductor. Draw necessary diagram. [4M]

(RBSE 2018)

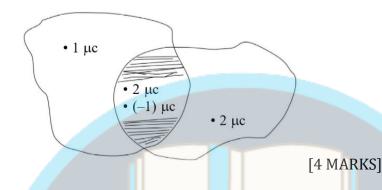
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10. Define Electric dipole moment.

[1M]

(RBSE 2019, RBSE 2016)

- 11. (a) Write the statement of Gauss's law for electrostatics. Derive an expression for electric field due to an uniformly charged infinite non-conducting sheet at a point near to it. Draw suitable diagram. (RBSE 2013,RBSE 2022)
 - (b) Calculate net electric flux from shaded region in given diagram.



(RBSE 2019)

12. Write the definition of dielectric constant of a medium.

[1M]

(RBSE 2020)

13. The SI unit of electric flux is - [1M]

(RBSE 2022)

(A) $NC^{-1}m^2$

(B) NC-1m-2

(C) N-1C-1m-2

(D) $N^{-1}C^{1}m^{2}$

14. State Gauss' law in electrostatic. Using this law derive an expression for intensity of electric field at any point near to a uniformly charged infinite conducting plate. Draw necessary diagram. [4M]

(RBSE 2021)

15. Define intensity of electric field. Obtain the formula for the intensity of electric field at a point on the axial line due to the electric dipole. Draw necessary diagram. [4M]

(RBSE 2021)

16. In Millikan's experiment, the charge found on a charged droplet was - 6.4×10^{-19} Coulomb, then write the number of electrons in that charged droplet. [1M]

(RBSE 2022)

17. Write Gauss's law. Using this law, find the electric field due to a uniformly charged infinite plane sheet at a point near the sheet. [3M]

(RBSE 2022, RBSE 2013, RBSE 2019)

18. Write the definition of electric dipole. An electric dipole is placed in a uniform external electric field (\vec{E}) as shown in the figure. Calculate the torque on this electric dipole. [3M]

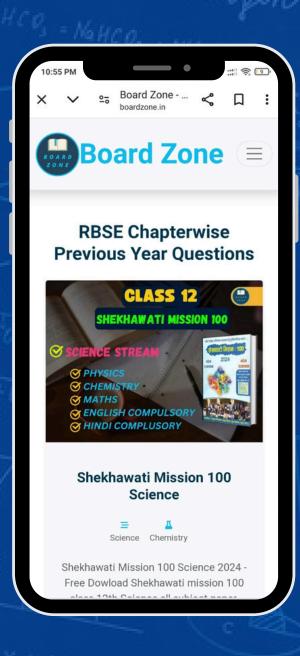
(RBSE 2022)

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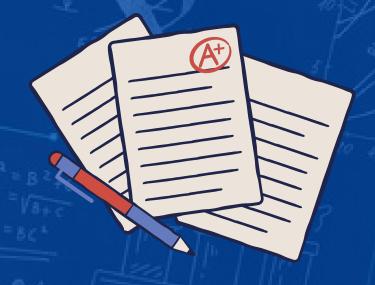
19. The SI value of permittivity of free space of	or vacuum is-[1M]	(RBSE 2023)
(a) $9 \times 10^9 \text{ Nm}^2\text{C}^{-2}$	(b) $9 \times 10^{-9} \text{ Nm}^2\text{C}^{-2}$	
(c) $8.854 \times 10^{-12} \text{ C}^2\text{N}^{-1}\text{m}^{-2}$	(d) $8.854 \times 10^{+12} \mathrm{C}^2\mathrm{N}$	V-1m-2
20. A uniformly charged thin spherical shell has an electric field at all pointsinside it.[1M] (RBSE 2023)		
21. Show the electric field lines due to a single	e positive charge (q > 0).	[1M] (RBSE 2023)
22. Write the value of electric field due to an e	electric dipole at a point on its axis.	[1M] (RBSE 2023)
23. The electric flux on a Gaussian spherical s centre, is ' ϕ '. If the radius of this surface surface will be – (A) Zero (C) 3ϕ		
24. The field lines of a single positive charge a [0.5 <i>M</i>]	are radially	(RBSE 2024)
25. Derive formula for the electric field due to Draw necessary diagram.	o electric dipole at any point on the equat	orial plane. [3M] <mark>(RBSE 2024</mark>]
26. Obtain an expression for the electric field sheet with the help of Gauss's law. Draw n		nfinite plane [3M] (RBSE 2024)

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- Chapter-wise PYQ
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