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section: C, 1St semester	+
section: Contraction Services (CV)	٠,,
Department: CSE	روسا
No :- 173	
e high the property of chapter !	
25 (Electric Potential)	
Jacher: Haseen Vallah Jan	
leacher	
Example 25.1:-	آمديد
The electric Field between	السمانية -
two parallel plates of oppsite charges	م ۔
Solution 8-	گسترین -
$E = V_B - V_A $	كسمته
d	-ر
The state of the s	آمر.
F - 12V	-ر
0.30x[0]	-مر
00.10	-ر
E = 4.0 x 103 V/m Ans	-ر
E = 4.0 × 10 V/M / 753	-ر
E.	
Example 25.2:	
	_
Withing -	_
Solution:	
AV= -Ed	
DV= -(8.0x 64 V/m) (0.50m)	
DV = -4.0x 64V	
Nous	
U DK+DU=0	
$(\frac{1}{2}mv^2-0)+eav=0$	
	-
V= -2 eav	
m (P.T.0)	

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Putting values,
V= -2(1.6x10-19c)(-4.0x104V)
1.67 × 10-27 Kg
V = 2.8 x 10 m/s Ans
Example 25.33-
The electric potential due
50 Lutions-
(a) Find the (4.00,0)m.
An 83-
$\frac{V_{p}=K_{e}\left(\frac{q_{1}}{r_{1}}+\frac{q_{2}}{r_{2}}\right)}{r_{1}}$
Vp = (8-99×109N·m²/c²) (2.00×10 0 + 500)
Vp = -6-29 X 103V
B) Find the change -00. infinity to point ?
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Ct = 93 Np
DU=Uf=U;=Q3Vp=0
Du=(3.00×10-6C)(-6.29×63V)

Example 25.91: The electric potential due Solutions: @ calculate the electric potential at point P on the y-axis Ans: Vp = kg \	Day: MTWTFS Date:/_
Solutions Calculate the electric potential at Anss Vp = Key (a) Vp = Co (a) Vp = Co (b) calculate the electric Potential at Point R on the X-axis VR = Key (a) VR = Key (a) VR = 2 key (a) Calculate V and Fr at a point on the x-axis far from dipole. Vp = Lim (2 key (a) Requestrictly and (2 key (a) Requestrictly and (2 key (a) Requestrictly and (3 key (a) Requestrictly at (a) Requestrictly and (b) Requestrictly	Example 25.4; The election
Solutions Calculate the electric potential at point P on the y-axis Anss Vp = Key (4 - 9) Vp = O Calculate the electric Potential at Point R on the X-axis VR = Ke (9) - Ke (-9 + 9) - Ke (-9 + 4) - 2 k eya x² az Calculate V and Ex at a point on the x-axis far from dipole. Vp = Lim (-2 keya) x/a = 2 keya x/a = 2 keya	to a dipole. petential due
Ans: Vp = Ket \(\frac{\partial}{\partial} \) = Ke \(\frac{\partial}{\partial} \) Vp = O (ila2 + y2	Solutions-
Ans: Vp = Ket \(\q \cdot \cd	a calculate the
Ans: Vp = Ket \(\frac{q}{v} \) = Ke \(\frac{q}{v} \) + \(\frac{q}{v} \) \[Vp = O \] (b) calculate the electric Potential at Point R on the X-axis \[Vp = Ke \(\frac{q}{v} \) - Ke \(-q \) + \(q \) \[V = Ke \(\frac{q}{v} \) \[V = \frac{q}{v} \) - Xe \(q \) \[V = \frac{q}{v} \]	point P on the
Vp = Ky = Vi = Ke (av + -9v (da ² +y ² Va ² + y ²) (b) calculate the electric Potential at Point R on the X-axis Vp = Ke (-9v + 9v i vi - Ke (-9v + 9v i vi - 2 ke 9ve z² a² C) calculate V and Ex at a point on the x-axis far from dipole. Vp = lim (-2 ke 9ve) x > a² a²	
= ke \(\frac{\av}{\sqrt{2}} + \frac{-q}{\sqrt{2}} \\ \(\sqrt{1} \) \(\sqrt{1} \) \(\sqrt{1} \) \(\sqrt{2}	$V_0 = V \leq V_1$
(b) calculate the electric Potential at Point R on the X-axis VR = KE Vi - Ke (-V + V) - Xe (xa xta) VR = 2 keVa 2 x² a² C) calculate V and Ex at a point on the x-axis far from dipole. VR = lim (-2 keVa x² a² x² a²	the state of the s
(b) calculate the electric Potential at Point R on the X-axis VR = KE Vi - Ne (-V + V) - Ne (-V + A) No - 2 keya 2 a2 Cocalculate V and Ex at a point on the x-axis far from dipole. VR = Lim (-2 keya x/2 - a2	$=V / G_1$
(b) calculate the electric Potential at Point R on the X-axis VR = KE Vi - Ne (-V + V) - Ne (-V + A) No - 2 keya 2 a2 Cocalculate V and Ex at a point on the x-axis far from dipole. VR = Lim (-2 keya x/2 - a2	+ -9
(b) calculate the electric Potential at Point R on the X-axis VR = K = Vi - Ke (-9 + 9) - 2 k = 9/a 2 a 2 C) calculate V and Ex at a point on the x-axis far from dipole. VR = Lim (-2ke9/a) x/a 2	Na2+42 Va2+42
(b) calculate the electric Potential at Point R on the X-axis VR = Ke (-qv + qv) - Ke (-qv + qv) - 2 k q q q 2 a 2 C) calculate V and Ex at a point on the x-axis far from dipole. VR = Lim (-2keq q q) x y a 2	
Ocalculate V and Ex at a point on the x-axis far from dipole. Vp = lim (-2keya) R = lim (-2keya) R = lim (-2keya)	Vp = 0
Ocalculate V and Ex at a point on the x-axis far from dipole. Vp = lim (-2keya) R = lim (-2keya) R = lim (-2keya)	
Sint R on the X-axis VR = K_Z Vi - Ke (-qv + qv) - 2 k eye 2 a2 Coalculate V and Ex at a point on the x-axis far from dipole. VR = lim (-2keya) x'-a2	(b) calculate the electric Potential at
VR = KE, VI - Ke (-Q + Q) - Ne (N-a N+a) VR = 2 keVa 2 a2 Cocalculate V and Ex at a point on the x-axis far from dipole. VR = lim (-2keVa) x'-a2	Point R on the X-axis
- Ke (-9 + 9) - Ke (-9 + 4) - 2 keye 2 2 2 Ocalculate V and Ex cet a point on the x-axis far from dipole. Vp = lim (-2keye) xya (-x²-a²)	Vp = K & Vi
Calculate V and Ex cet a point on the x-axis far from dipole. Ve = lim (-2keVa) xya (-x²-a²)	- i vi
Calculate V and Ex cet a point on the x-axis far from dipole. Vp = lim (-2keVa) xya (-x²-a²)	- V - (- 9 + 9)
Ocalculate V and Ex at a point on the x-axis far from dipole. Vp = lim (-2keq/a) xya (-x²-a²)	(n-a n+a)
Ocalculate V and Ex at a point on the x-axis far from dipole. Vp = lim (-2keq/a) xya (-x²-a²)	V- 2 K a.
Vp = lim (-2keq/a) xya (-2keq/a)	R _ 2 KeVa
Vp = lim (-2keq/a) xya (-2keq/a)	2-02
Vp = lim (-2keq/a) xya (-2keq/a)	
Vp = lim (-2keq/a) xya (-2keq/a)	Wealculate V and Ex at a point on
$\frac{\sqrt{p} = \lim_{\kappa \to 0} \left(\frac{2 \kappa e q_{\alpha}}{\kappa^2 - \alpha^2} \right)}{\kappa^2 - \alpha^2}$	the x-axis for from dipole.
C K - GZ /	Vo= lin (skeg/a)
	K7)a (x2-a2)
= -2 keq/a	= -2 kequa (2x you)
(2) (2) (2) (2)	22 (2)0)
Lui la a lactore de la sur la cua	Lui la a la charca de la como de
written in cortasion coordinate System as	written rector notation E is other
in cortesion coordinate System as	in corteson coordinate System as
FINANTI	FIRMAN
E=- VV = - (10 + 10 + 10) V	=-(10+10+K0)

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	7 is gradient operator
2	where V is gradient operator.
10-	$\frac{SO_{n}}{dn} = -\frac{dv}{dn} \left(\frac{-2keVa}{v^{2}} \right)$
-	dn an x=
3 -	
	and (I)
4	= 2 kevad (n2)
Ì.——	4/4 9/6 (- 10 SS)
	= -4ke4a (nx)
	χ^{3}
i	
	2000
	Example 25.5:
	Electric Potential our co
	uniformly charge Ring.
	Children of the control of the contr
	Solution:
	A Find an expression total charge .
	Ans:
	V- ke de
_	V
	= Ke (da)
	Va + 222
	1/2
	Clo.
	Vatra J
<u>`</u>	$/=\kappa_{0}$
(Inches)	
-	Va tx
	(B) Find an enpression at point!
-	Southans
	F. 7 1 (2,2)
	En = dv KO d (atr)
	$E_n = -\frac{dv}{dx}k_c Q \frac{d}{dx} \left(\frac{a^2 + x^2}{a^2 + x^2} \right)^n$
	= -1-3/2 (2w)
	$= \frac{1}{(a^{2}(-b)(a^{2}+x^{2})^{-3}} (2x)$
	1 - Keze O
No.	(a2+x27312
	12 4×551715

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Example 25.6	
Flechole	3
uniformly changed disk	
Solutions-	
A Find the	- تو
a Find the expression axis of the	—25° 5
do = Edd	
dq = odA = o (ozrdr) =) Tordr	-37
	رون آر
dy = Keday = Keliordy	ر تر
Vinit Vituz	- تريب
V-TI- C	- ر
V=TKes 2rdr	تريد
5 Vrtm2	آريد
- 71 - 6 () 13-1/2	تريد
= Theo ((+ x2) - 1/2 2 ydy	- آر
V= 27keo (R2+2)/2-x]	- آر
= 2 TK-5 (12"+x") -x]	-ر
AC 111	آر رو
B) Find the x aris of the	آر ر
	مر
Ansi-	ركر
$\frac{E_{\mathcal{H}} = -dv = -2\pi k_{e} \sqrt{1 - \frac{\varkappa}{(A^{L} + \varkappa + h_{L})}}}{d\varkappa}$	
$\frac{E_{N} = -dv = -2\pi k_{e} \sqrt{1 - \frac{n}{(A^{L} + \lambda + l)}}}{d\lambda}$	رر_
	_رر
Example 25-7:	,- _
finite I Electric Field due to a	
finite line of charge.	
- STATION-	
du = Kedq = Kedan	
V JEHN?	
	_
V-J Ke Adre	-

