| | Date. |
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| | A ssignment-4 Page No. |
| | UNIT-3 |
| | |
| Ans-1 | Consider a charge particle q of |
| 1/19 | mass on through V. |
| | wind with the same of the same |
| | K=9V, 99V 18 12201 |
| | a lile 6 |
| | k=9v, {9v is work done on changed purbicle by electric field} |
| | |
| | We know that k-E, k= 1 mv2 |
| | |
| 1 1 12 | And momentum p=mv |
| | $=) k = p^2 \Rightarrow p = \sqrt{2mk}$ |
| - | 2m |
| | K= qv |
| | |
| | P= JamqV |
| | de broglie wavelength (1), 1= h |
| | P |
| | /= b |
| | Jaman |
| | V Control of the cont |
| | Expression for de-Broglie wavelenath |
| | With a description having |
| | chi changea punde |
| | Expression for de-Broglie wavelength Witha changed panhicle having Change & mass -by potential V- |
| | |
| | |
| | |

| Ans-2 | The group is cloudy is simply |
|---------------------------------------|--|
| | |
| - | wiret come? Vy = dw |
| | J dk |
| | $V_{q} = d(2\pi V) = d(V)$ |
| Wegner is | d(2x) $d(1)$ |
| | (A) |
| | K= 27 -> 1 = d('/A) - (3) |
| | A Vg d2 |
| | O The state of the |
| | If E and V represent that energy |
| | & D.F. |
| | 1 mv2 = E-V |
| - | |
| ~ | $V = \int 2 (EN) \int \frac{1}{2}$ |
| · · · · · · · · · · · · · · · · · · · | LmJ |
| <u> </u> | Using de-broglie |
| ~ | J. |
| · | 1 - mv - m [2(EV)]/2 |
| - | 1 1 N N L M J |
| | $\frac{1}{1} = \frac{m}{2(hv-v)} \frac{1}{1}$ |
| - 43 | L M J |
| | |
| , | Substituting Egn (1) |
| | |
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|------|--|
| | 1 - d [m /2(hv-v)) 1/2] |
| | ry dr Ln (m) |
| | 1 = 2m / 2(hv-v))-1/2 2h |
| | vg h (m) m |
| | |
| | 1 = (2 (hv-v))-1/2 |
| | Vg |
| - | Janua Delocita |
| | Vy V group velocity Posticle velocity |
| Ans- | - P= hc = momentum of incident |
| | 1 phohan. |
| | P 10 |
| | Pi = hc _ momentum of Scattering |
| | Prioreri |
| - | P2: momentum of scattered electron |
| | P2: momentum of scattered electron at angle 9. |
| | Using low of Conversation of momentum |
| | 20 3 KU - 7 V - 1 CO W - 1 |
| | $P = P_1 \cos \alpha + P_2 \cos \alpha$ |
| | P2 (05 Q = p-p, cos Q |
| | Prisind = Print |

Date. -

| | Using law of Conversion of |
|---|--|
| | momentum |
| | momentoin |
| *, | taking rohio |
| | |
| | Pisno Pisno |
| | Prusp ht - Picusa |
| | Comment of the state of the sta |
| | $ton \phi = 1$ |
| 1,4 | At cota 1' - cota |
| Edwilet | Picsina 18ina |
| 6 | |
| 4 | tan p = 18in Q 18in Q |
| | 1'- 1 COSQ (1'-1COSO) + A) |
| | |
| | tang = 18ina |
| | 1(1-cusa) + h (1-cusa) |
| | mc |
| | tand = Sin Q |
| | (1-cus a) + h+ (1-cusa) |
| | mc ² |
| - malina no | tan \$ / 1+ ht = sind |
| - | mc2 1- cus Q |
| | |
| - | 2 Sin 0/2 cas 0/2 |
| | 1 - cos 2 Q/2 + 8: n2 Q/2 |
| Production of the Contract of | TAGES TO MICH. |

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| | p => 28in 0/2 cos0/2 = cot0/ |
|-------|---------------------------------------|
| fun | $28in^{2}0/2$ = $cot 0/2$ |
| | indicate will be to the |
| | tung = coto |
| | 1st buy a maxa word |
| | A Moc2 |
| | 0. AV = 1.8.6 2 × 10.3% |
| Ans- | 4- The photon must be near to |
| | nucleus in order to satisfy |
| - 1 | conversation of momentum as an |
| | e- position pair produced in free |
| / 4 | space coil satisfy convicenchion |
| | of both energy and momentum. |
| | Because of this when pair |
| | production occurs, atomic nucleus |
| - | recives some recoil. |
| | |
| Ans 3 | · Hesinberg, un certainity principle: |
| | It is also known as uncertaining |
| | principle It states that he per |
| | A Colority of an action |
| | be measured charge at |
| | time even in theory. |
| | |
| | Radius of nucleus of order of 10-5 m |
| | |

| & maximum uncentainty in |
|--------------------------------------|
| post of ciean within the |
| nucleus will be 10-5m. |
| funt - met 9 |
| NOW DX. MOV & h |
| 42 |
| DV = 6.62 × 10-34 |
| 4×3.14 × 9.1×10-31 ×10-15 |
| nucleus in widos to satisfy |
| DV = 5.97×1010m/s |
| complete por produced in |
| As this level of uncertainty in |
| velocity is impossible to |
| achieved hence e- const exist |
| sin nucleus. |
| Micros records and a |
| |
| art. Herinberg, the restaining point |
| staci in seconda de la contra en |
| LE SEAS MALE TO SHOW TO |
| and train as to war the |
| and the Morrow Market and the |
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