Edukado Hub
DPP-1
Units and Measurements

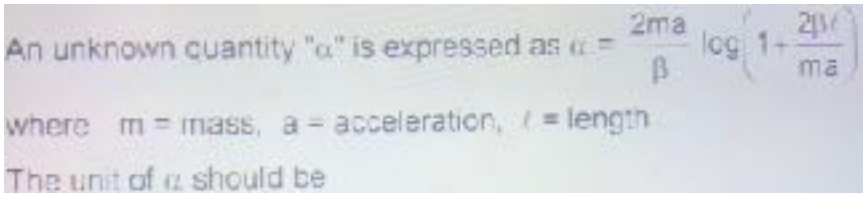
Question 1: Choose which are the sets of fundamental quantities?
1. Mass, length, area
2. Mass, charge, time, current
3. Mass, charge, time
4. Mass, time, current
5. Mass, work, charge

Question 2: A dimensionless quantity
1. Never has a unit.
2. Always has a unit
3. May have a unit
4. Does not exist

Question 3: A unit less quantity
1. Never has a non-0 dimension.
2. Always has a non-0 dimension.
3. May have a non-0 dimension
4. Does not exist

Question 4: force F is given in terms of t and distance x by F = A sin C t + B cos Dx. Then the dimensions of A/B and C/D are given by?

Question 5:



1. Meter.
2. m/s
3. m/s^2
4. s-1

Question 6: The Vander waal equation for 1 mole of a real gas is
(P+ a/V^2)(V - b) = RT,
where P is the pressure, V is the volume, T is the absolute temperature, R is the molar gas constant and a, b are Vander waal constants.
The dimensions of a are the same as those of a
(A) PV (B) PV^2 (C) P^2V (D) P/V
The dimensions of b are the same as those
(A) P (B) V (C) PV (D) nRT
The dimensional formula for ab is
(A) ML2 T-2 (B) ML4 T-2 (C) ML6 T-2 (D) ML8 T-2

Question 7:In terms of potential difference V, electric current I, permittivity €o permeability Ho and speed of light c, the dimensionally correct equations(s) is(are)
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1. Ho I^2 = €0 V^2

2. €o I= Ho V
3. I=€o V
4. HO CI= €o V .

Question 8: Let [€o] denote the dimensional formula of the permittivity of vacuum. If M = mass, L = length, T = time and A = electric current, then :
[€o] = [M-1 L-3 T2 A]
[€o] = [M-1 L -3 T4 A2 J
[€o] = [M-1 L2 T-1 A-2]
[€o] = [M-1 L2 T-1 A]

Question 9: the surface area of a solid cylinder of radius 2.0 cm and height 10.0 cm is equal to …… mm^2.

Question 10: If force (F), velocity (v) and time (T) are taken as fundamental units, then the dimensions of mass are
[FVT -1]
[FvT-2]
[Fv1T-1]
[Fv-1T-1]

Question 11: Dimensions of resistance in an electrical circuit, in terms of the dimension of mass M, of length L, of time T and of current I, would be
[ML2T-3I-1]
[ML2T-2]
[ML2T1I-1]
[ML2T-1I-1]

Question 12: Which one of the following represents the correct dimensions of the coefficient of viscosity?
ML-I T-2
MLT-1
ML-1 T-1
ML-1 T-1

Question 13: If energy (E), velocity (v) and time (T) are chosen as the fundamental quantities, the dimensional formula of surface tension will be
[Ev-2T-1]
[Ev-1T-2]
[Ev-2T-2]
[EV2T2]

Question 15: The dimensions of (Ho€o)-1/2 are
[L1/2 T-1/2]
[L-1T]
[LT-1]
[LT1]