LGS GROUP OF COLLEGES
A PROJECT OF LAHORE GRAMMAR SCHOOL

Name: Abeera Gull Class: 11th Roll No: 1144

Subject: Biology Physics Test No: W5 Date: 18-11-24

	A	B	C	D
1	○	○	○	○
2	○	○	○	○
3	○	○	○	○
4	○	○	○	○
5	○	○	○	○
6	○	○	○	○
7	○	○	○	○
8	○	○	○	○
9	○	○	○	○
10	○	○	○	○
11	○	○	○	○
12	○	○	○	○
13	○	○	○	○
14	○	○	○	○
15	○	○	○	○
16	○	○	○	○
17	○	○	○	○
18	○	○	○	○
19	○	○	○	○
20	○	○	○	○

Marks Obtained

Physics

Subjective Type

Qustion # 06

Given:-

$S = 2.50\,m$

$\theta = 6.6 \times 10^{-9}$

Find:-

$r = ?$

Formula

$S = r\theta$

$\frac{S}{\theta} = r$

Solution:-

$\frac{2.50}{6.6 \times 10^{9}} = r$

0.3787×10^{9}

Result:-

$3.787 \times 10^{9-1}$

$\simeq 3.8 \times 10^{8}\,m$

Student Name: _____

Question # 02

Given:-

$r_0 = 3.85 \times 10^8 m$

$r_s = 1.74 \times 10^6 m$

Find:-

$\frac{L_s}{L_0} = ?$

Solution:-

$L_s = I_s \omega_s$

$L_0 = I_0 \omega_0$

$\frac{L_s}{L_0} = \frac{I_s \omega_s}{I_0 \omega_0}$

$\because I = \frac{2}{5} m r^2$

$I = m r^2$

$\frac{L_s}{L_0} = \frac{\frac{2}{5} m r_s^2 \omega}{m r_0^2 \omega}$

$\frac{L_s}{L_0} = \frac{2 r_s^2}{5 r_0^2}$

$\frac{2 (1.74 \times 10^6)^2}{5 (3.85 \times 10^8)^2}$

$\frac{2 (1.74 \times 10^6)^2}{5 (3.85)^2} \times \frac{10^{12}}{10^{16}}$

$= 0.0817 \times 10^{12-16}$

$= 0.0817 \times 10^{-4}$

$= 8.17 \times 10^{-6}$

$\frac{L_s}{L_0} = 8.2 \times 10^{-6}$

Result:-

$\frac{L_s}{L_0} = 8.2 \times 10^{-6}$

Question # 03

when elevator is an rest its acclaration is zero. and weight of person is

$a = 0$

W

$F_n = W - T$

$F = ma$

$ma = W - T$

$0 = W - T$

$0 + T = W$

$\boxed{T = W}$

when elevator acclartion upword weigh of person is $2W$

$F_n = T - 2W$

$\because ma = T - 2W$

$2W + ma = T$

$2W + (\text{some value}) = T$

$2W > T$

Question # 05

$$r = \left[\frac{GMT^2}{4\pi^2}\right]^{1/3}$$

taking $\frac{1}{3}$ 3 on both sides

$$r^3 = \left[\frac{GMT^2}{4\pi}\right]^{\frac{1}{3} \times 3}$$

$$r^3 = \frac{GMT^2}{4\pi}$$

$$r^2 \cdot r = \frac{GMT^2}{4\pi^2}$$

$$\frac{4\pi^2 v^2}{T^2} = \frac{GM}{r}$$

taking Squr root on both side.

$$\frac{2\pi r}{T} = \sqrt{\frac{GM}{r}}$$

Question # 05

$G = 6.673 \times 10^{-11} Nm^2/kg^2$

$M = 6 \times 10^{24} kg$

$\pi = 3.14$

$T = 24 hr = 24 \times 3600 = 86400 s$

$$r = \left[\frac{GMT^2}{4\pi^2}\right]^{1/3}$$

$$= \left[\frac{6.673 \times 10^{-11} \times 6 \times 10^{24} \times (86400)^2}{4(3.14)^2}\right]^{1/3}$$

$r = 42.3 \times 10^6 m$

$\because r = R + h$

$h = r - R$

$h = 42.3 \times 10^6 - 6.4 \times 10^6$

$= 3.59 \times 10^6$

$= 3.59 \times 10^{6+1}$

$= 3.59 \times 10^7$

Question # 02

Critical velocity is that velocity which is requised to a body move in orbital path. it is represented by v_c.