Mass, Weight – 2021 O Level 5054

1. Nov/2021/Paper_11/No.3

Two identical objects begin to fall from rest.

One object falls from 200 m above the Earth's surface and the other falls from 200 m above the Moon's surface. One second after they have started to fall, both objects are still accelerating.

There is no atmosphere on the Moon and the weight of each object is constant.

Which row describes the motion of both objects at this time?

	acceleration of object falling above the Earth's surface	acceleration of object falling above the Moon's surface
A	decreasing	constant
B	constant	constant
C	increasing	decreasing
D	increasing	increasing

2. Nov/2021/Paper_11/No.5

An electron has mass.

Where does a stationary electron experience a force?

A in an electric field only

B in a gravitational field only

C in a gravitational field and an electric field only

D in a gravitational, electric and magnetic field

3. Nov/2021/Paper_12/No.6

An object in a laboratory is used to determine the gravitational field strength g.

Which quantity is equal to g?

A the weight of the object

B the mass of the object

C the $\frac{\text{weight}}{\text{mass}}$ of the object

D the $\frac{\text{mass}}{\text{weight}}$ of the object

4. Nov/2021/Paper_21/No.2a

Fig. 2.1 shows a man of mass 80 kg standing in a lift (elevator).

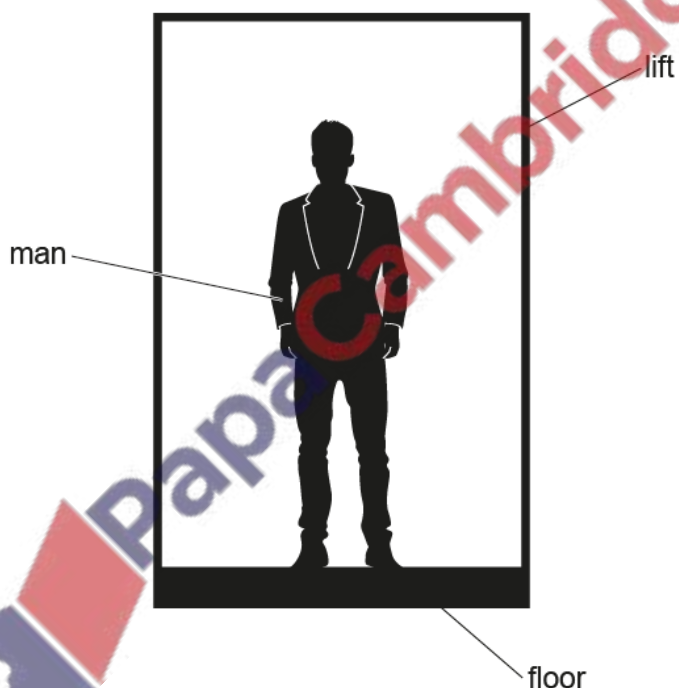

Fig. 2.1

The gravitational field strength g is 10 N/kg.

(a) Calculate the weight of the man.

weight = ... [1]

5. Nov/2021/Paper_22/No.1a

Fig. 1.1 shows a jug of liquid and an empty measuring cylinder that is on an electronic balance.

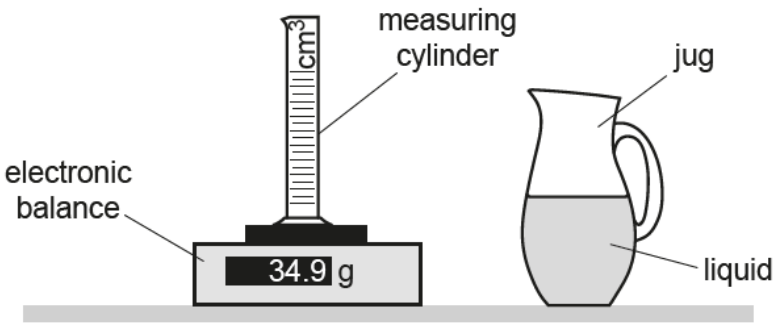

Fig. 1.1

(a) The electronic balance uses the weight of the measuring cylinder to determine its mass.

Weight and mass have different units.

State **two** other ways in which weight differs from mass.

1. .....

.....

2. .....

.....

[2]

6. June/2021/Paper_11/No.6

Which row shows the mass and the weight of an object on the Earth's surface?

[gravitational field strength g = 10 N / kg]

	mass / kg	weight / N
A	2	0.20
B	2	10
C	5	5.0
D	5	50

7. June/2021/Paper_12/No.6

The gravitational field strength in space is smaller than on the Earth's surface.

A rocket is used to launch a satellite from the Earth's surface into space.

How are the mass and the weight of the satellite affected as the satellite moves away from the surface of the Earth and into space?

A Both the mass and the weight are unaffected.

B The mass decreases and the weight decreases.

C The mass increases and the weight is unaffected.

D The mass is unaffected and the weight decreases.