PHYSICS MARKING SCHEME
FORM TWO

SECTION A. (15 MARKS)

01

i	ii	iii	iv	v	vi	vii	viii	ix	x
D	D	B	B	D	C	A	C	D	B

@ 01 mark.

02.

LIST A	i	ii	iii	iv	v
LIST B	G	E	A	B	D

@ 01 mark.

SECTION B

03. (a) (i) The volume of submerged part must be large to displace large amount of water. (01 mark).

(ii) The average density of object must be less than a density of surrounding fluid. (01 mark)

(iii) The upthrust due to water must be equal to total weight of the object. (01 mark)

(b) (i) Weight of a body in space (A) = 18N

Upthrust (U) = 9N

Real weight (R) = Apparent weight (A) + Upthrust (U)

(01 mark)

The real weight = 18N ... 02 marks.

(ii) Also;

$$\text{Real density} = \frac{R}{R-A} = \frac{R}{U}$$

$$= \frac{18N}{2}$$

$$= 9N \quad (02 \text{ marks})$$

∴ Relative density = 9N

03. Also;

(iii) R.D = $\frac{\text{Density of object}}{\text{Density of water}}$

Density of object = $9 \times 1000\ kg/m^3$

$= 9000\ kg/m^3$ (02 marks)

04. (a) (i) Law of forces:

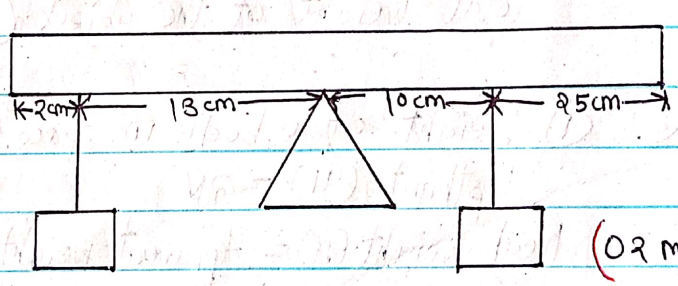
The sum of upward forces = the sum of downward forces. (01 marks)

(ii) Law of moments:

The sum of clockwise moment = the sum of anticlockwise moment (01 marks)

(iii) The wholly weight of the body should act as the centre of gravity (01 mark)

(b) (i)



(02 mark)

(ii) The sum of clockwise moments = The sum of anticlockwise moment

$F_1 d_1 = F_2 d_2$

$M_1 g d_1 = M_2 g d_2$

$M_1 d_1 = M_2 d_2$

$W \times 10 = 40 \times 13$

$W = \frac{40 \times 13}{10}$

$W = 52g$ (03 marks)

05 (a) A big elephant manages to walk comfortably in a mud soil without sinking due to that feet exerts small pressure due to large area of their feet while;
Humans feet have small area, hence experiencing greater pressure which mates a human to sink. (02 marks)

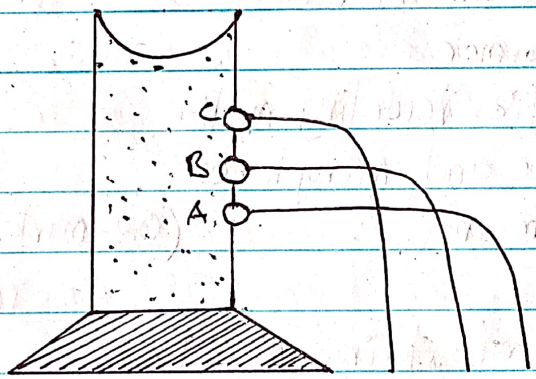
(b)

Application of hydraulic press.

(i) To lift heavy loads (01 mark)

(ii) To compress materials in industries (01 mark)

(c) (i) A diagram showing the variation of pressure in liquid with depth.



(04 marks)

As depth increases water comes ~~of~~ out with higher speed indicating increased greater pressure. The hole A spread water long distance because of high depth compared to hole B and C.

(ii) Because at bottom of dam there is greatest pressure due to high depth. (02 marks)

06. (a) (i) Differences between Ferromagnetic and Paramagnetic materials.

Ferromagnetic materials	Paramagnetic materials.
i) Are strong attracted to both poles of magnet	- Are weak attracted to a single pole.
ii) Used to makes strong magnetic electrical circuit as insulators eg zinc	- Used to make temporary magnet.
iii) Examples are Iron, cobalt and nickel.	- Examples are aluminium, sodium, oxygen and magnesium.

(02 marks)

(b) Applications of magnet.
- Transformer
- Magnetic recording media
- Speaker and microphones.
- Electromagnet. (02 marks)

(c) Ways of storing magnet.
- Keep away from ferrous material.
- store magnet in pairs and use magnet keepers to store them.
- store away from heat.
- Store away from electrical and magnetic field.

(06 marks.)

07. (a) From;

charge, $Q = CV$

$= 200\,\mu F \times 10\,V$

$= 2 \times 10^{-3}\,C$

∴ The charge accumulated in the capacitor is $2 \times 10^{-3} C$. (05 marks)

Also;

(b) Energy, $U = \frac{1}{2} CV^2$

$= \frac{1}{2} \times (200\,\mu F) \times (10V)^2$

$= 0.01\,J$

∴ Energy = 0.01 J. (05 marks)

08. (a) If you connect them in parallel, then bulb with lower resistance (higher wattage rating bulb) will glow blighter than high resistance bulb.

In parallel : Power, $P = \frac{V^2}{R}$, where V is constant. (05 marks)

(b) If you connect them in series, then bulb with higher resistance (lower wattage rating) will glow brighter than low resistance bulb.

In series : Power, $P = I^2R$, where is constant. (05 marks)

09. (a) This is because honey has high cohesive force in its particles than adhesive force (02 marks)

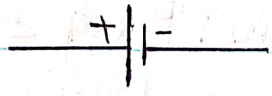
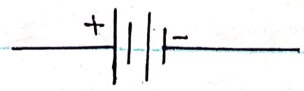
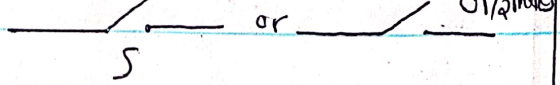
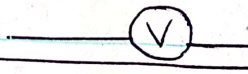
(b)(i) Brownian motion: Is a random motion of tin particles suspend in a fluid (02 marks)

(ii) Kinetic theory of matter: All matters are made up of very small particles that are in constant motion (02 marks)

(c) (i) Directly proportional (when the tension increases, the extension also increases). (02 marks)

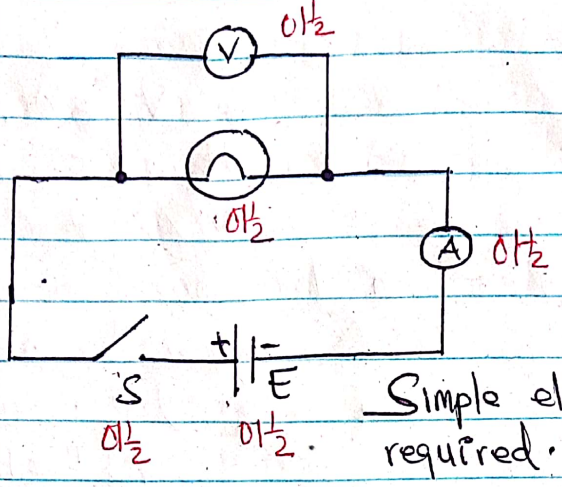
(ii) Hook's law, which state that "within the elastic limit, the extension is directly proportional to the force applied". (02 marks)

10 (a)

Name of electric Components.	Circuit symbol
(i) A dry cell	 01½ marks
(ii) A battery consisting of two dry cells.	 01½ marks
(iii) Switch or key	 01½ marks
(iv) A lamp or bulb	 01½ marks
(v) Voltmeter	 01½ marks

Y.B.N

10 (b)



0½ 0½ 0½ 0½ 0½

Simple electric Circuit required.