

NAME:.....SIGN:.....

525/1

Physics

Paper 1

1<sup>1</sup>/<sub>2</sub> hours

## **JINJA MODERN SECONDARY SCHOOL**

Uganda Certificate of Lower Secondary Education

END OF TERM II EXAMINATION 2023

S.2 PHYSICS

Paper 1

1 Hour and 30 minutes

### **INSTRUCTIONS:**

- *This paper has three (3) questions.*
- *Attempt all questions.*
- *Present your answers precisely on the answer sheets provided.*
- *Use a neat handwriting to avoid loss of marks.*

### **FOR EXAMINER USE ONLY**

Question	Scores
1	
2	
3	
Total	

## Question one

### Scenario:

In your community, some of the roads are marram. During the rainy season, lorries, pickup and trucks usually skid and slide in the mud and people struggle to push or pull them as shown in *fig.1*.

### Support material:

*Fig.1*



### Task:

If you found a driver stuck in the mud;

- Suggest possible ways you would use to remove the truck from this position.
- Advise the driver on how to avoid this situation.

## Question two

### Scenario:

It is a very common practice for people in Uganda to overload trucks as shown in *fig. 2 (a)*. Besides that, the current design of buses allows for loading luggage in bus cabins as shown in *fig. 2 (b)* than carrying it on top of roof racks. *Fig. 3 (c)* shows the different positions (c) (i), (c) (ii) and (c) (iii) of the vehicle in certain circumstances during its cruising.

**Support material:**

**Fig. 2**

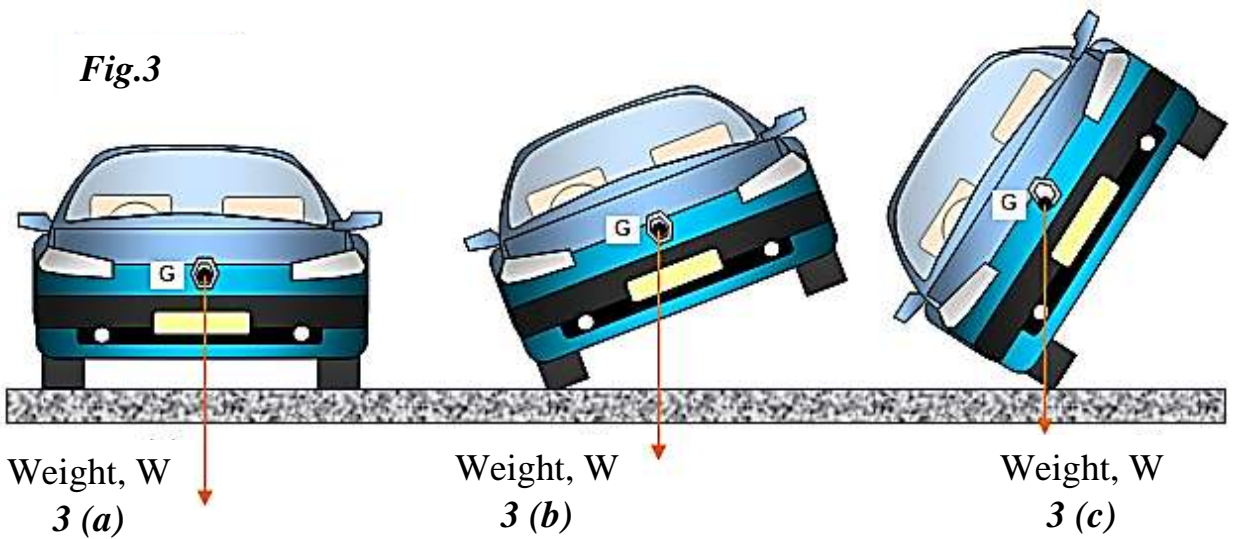


**2 (a)**



**2 (b)**

**Fig.3**



**G = The centre of gravity**

**Task:**

- Suggest examples in everyday life where stability is applied.
- Explain why
  - The practice carried out in *fig.2 (a)* is risky in relation to stability?
  - The current design of buses is as the one shown in *fig.2 (b)*
- Giving reasons, in which case is the vehicle in *fig.3* stable, unstable or will overturn.

### Question three

#### Scenario:

Table 1. shows results in an experiment when a senior two student was determining pressure exerted by different substances on the ground. Fig. 4. Shows different types of shoes that are used by different people in their daily life and in activities they do. Use them carefully and answer the questions that follow.

#### Support materials:

Table 1.

Total area (cm <sup>2</sup> )	Total area (m <sup>2</sup> )	Mass (kg)	Force (N)	Pressure (Nm <sup>2</sup> )
420	.....	.....	840	.....
.....	.....	40	.....	20
.....	40	.....	5000	.....
4	.....	12	.....	.....
.....	6	.....	.....	20000

Fig.4.



#### Task:

- Copy and complete Table 1.
- From fig.4, explain the following observations
  - Football boots are made with studs of small area.
  - It is easier to walk on sand in flat shoes than heel shoes.

**END**