EXODUS COLLEGE SCHOOL

TECHNICAL DRAWING

S.5 END OF TERM 2 2026

PAPER 1

3 HOURS

INSTRUCTIONS:

- This examination paper consists of two compulsory items.
- Responses to each item should be on a separate page of the drawing paper size A2 provided.

Item 1

The Technical drawing society organized a contest where students graphically analyzed forces in the structure shown in **Figure 1** to justify the relevancy of each member. Results from the contest emerged with two best students yet the society had only one prize for the best. The society then decided to run a contest between those two best students to obtain a single winner. They were required to perform analysis of the same structure but when an additional **12N** load is suspended at N.

Task:

Produce the analysis expected of the winner.

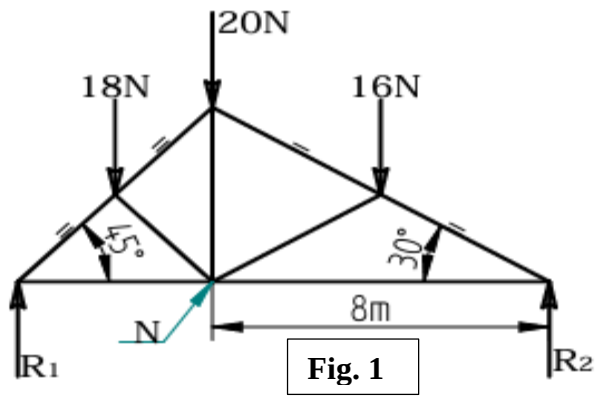

Fig. 1

Item 2

During the construction of an extension at Debet Health Centre, the builders found it convenient to temporarily use an existing **12 m** span beam from a nearby building to support the building materials. The beam rests on two walls which are **9 m** apart. Several loads were then placed on the beam: 8 blocks positioned **1 m** from the end, a bag of cement at **2 m** from the blocks, 3 bags of lime at **8 m** from the cement and a Workman weighing **60 kg** standing at the extreme end, as illustrated in **figure 2**. However, a disagreement arose among the builders about whether the beam could safely sustain the loads placed along its length. Since none of the builders could perform a detailed graphical analysis, they were unable to make an informed decision about the safety of the beam.

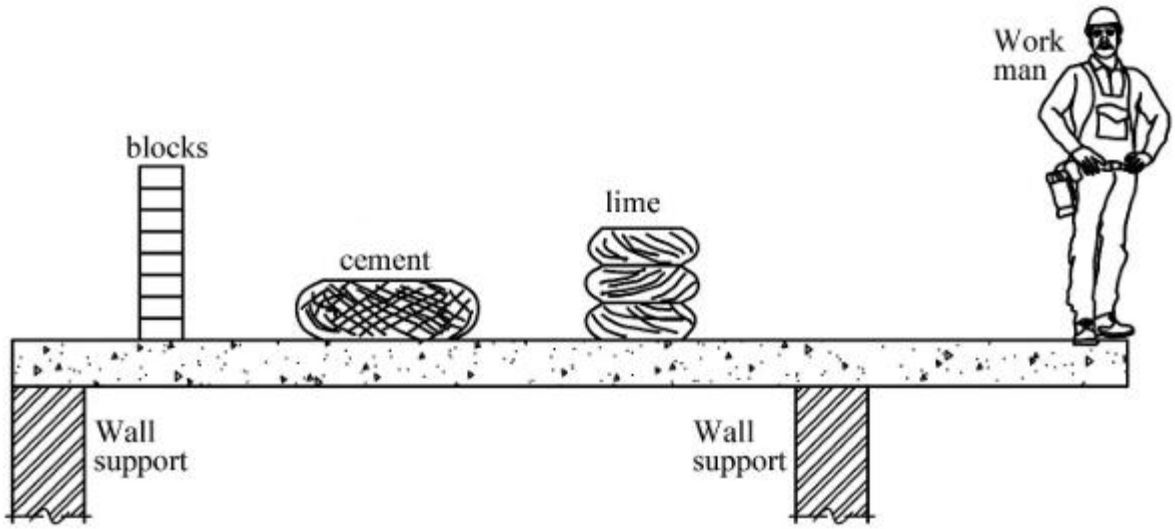

Fig. 2

Note:
A bag of cement and lime weighs **50kgs** and **15kgs** respectively.
Each block weighs **5kgs**.

Make the graphical analysis of the beam for the builders.