NATIONAL
SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2017

CIVIL TECHNOLOGY

MARKS: 200

TIME: 3 hours

CVLTE

This question paper consists of 17 pages,
including 4 answer sheets and a formula sheet.

QUESTION 3: CIVIL SERVICES

Start this question on a NEW page.

3.1 FIGURE 3.1 below shows a water trap that is used in civil services.

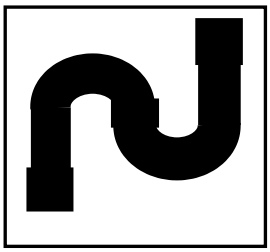

FIGURE 3.1

3.1.1 Identify the water trap above. (1)

3.1.2 Explain the purpose of a water trap. (1)

3.2 State TWO factors that determine the temperature of the water in a solar heater. (2)

3.3 You are a plumber and must answer the following questions from a client:

3.3.1 Name the part in an electric geyser that is used to warm up water. (1)

3.3.2 Explain why the cold water inlet is mounted at the bottom of the geyser and the hot water outlet is mounted at the top of the geyser. (2)

3.3.3 Name the component that is installed for safety purposes to prevent the geyser from bursting when the water becomes too hot. (1)

3.4 FIGURE 3.4 below is a photograph of a storm-water grid on a road. Study the photograph and answer the questions that follow.

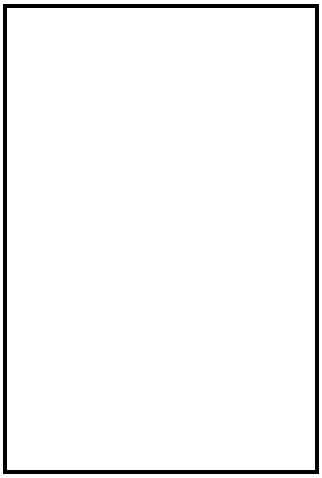

FIGURE 3.4

3.4.1 Explain the function of the grid. (1)

3.4.2 State ONE consequence if the grid is blocked. (1)

4.6 FIGURE 4.6 below shows the floor plan of a room. You must install ceiling boards and skirtings in this room.

SPECIFICATIONS:

- Outside measurements of the room: 7 000 mm x 4 000 mm
- The external walls are one-brick walls (220 mm)
- Size of sliding door: 3 000 mm wide x 2 000 mm high
- Size of ceiling boards: 4 200 mm x 1 200 mm

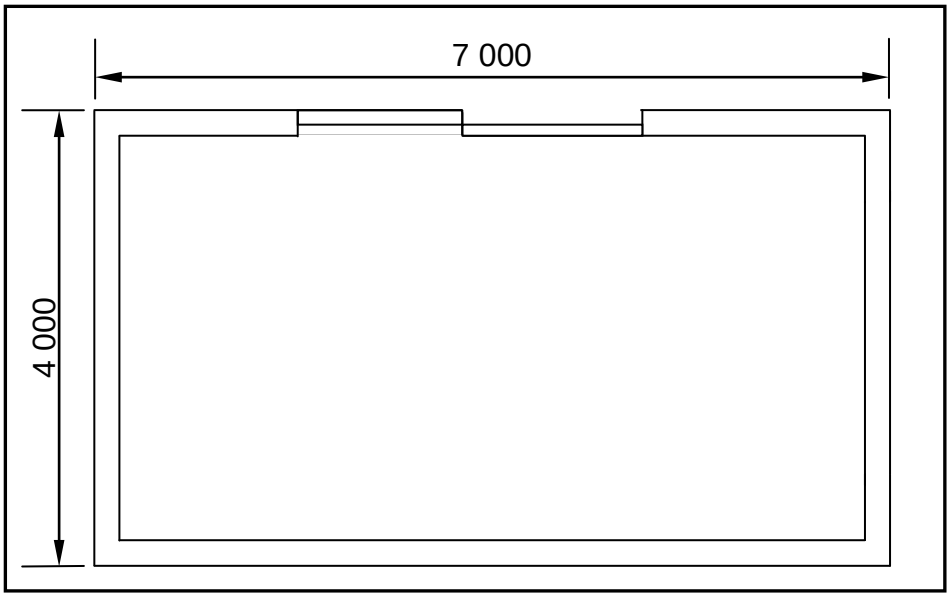

FIGURE 4.6

Use ANSWER SHEET 4.6 and answer the following questions:

4.6.1 Calculate the inside area of the room in square metres (m²). Round off your answer to TWO decimal places. (6)

4.6.2 Calculate the area of ONE ceiling board in square metres (m²). (3)

4.6.3 Calculate the length of the skirting required in metres (m). Ignore the reveals. (4)
[30]

QUESTION 5: APPLIED MECHANICS

Start this question on a NEW page.

5.1 FIGURE 5.1 below shows a shaped lamina. All dimensions are in millimetres.

Study the lamina and calculate the centroid of the lamina from A-A. Round off your answer to TWO decimal places.

HINT: Use the formula on the FORMULA SHEET.

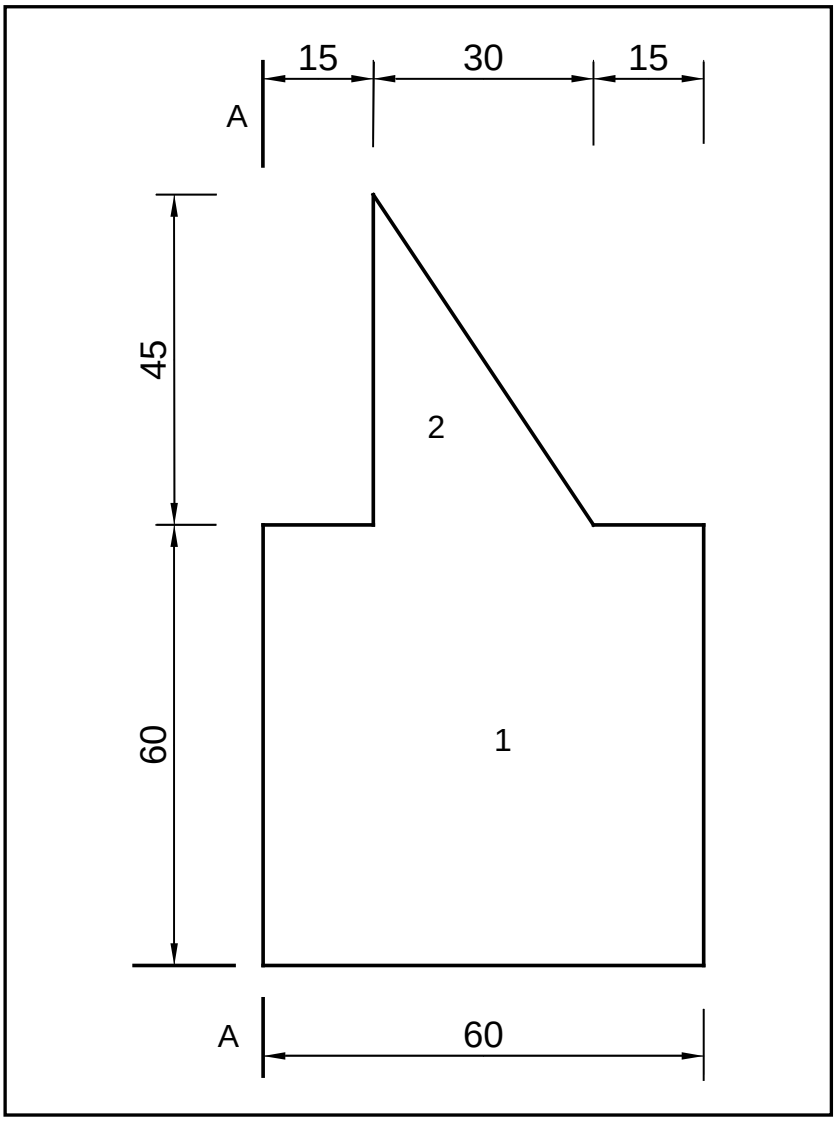

FIGURE 5.1 (10)

CENTRE NUMBER:								

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ANSWER SHEET 2.11

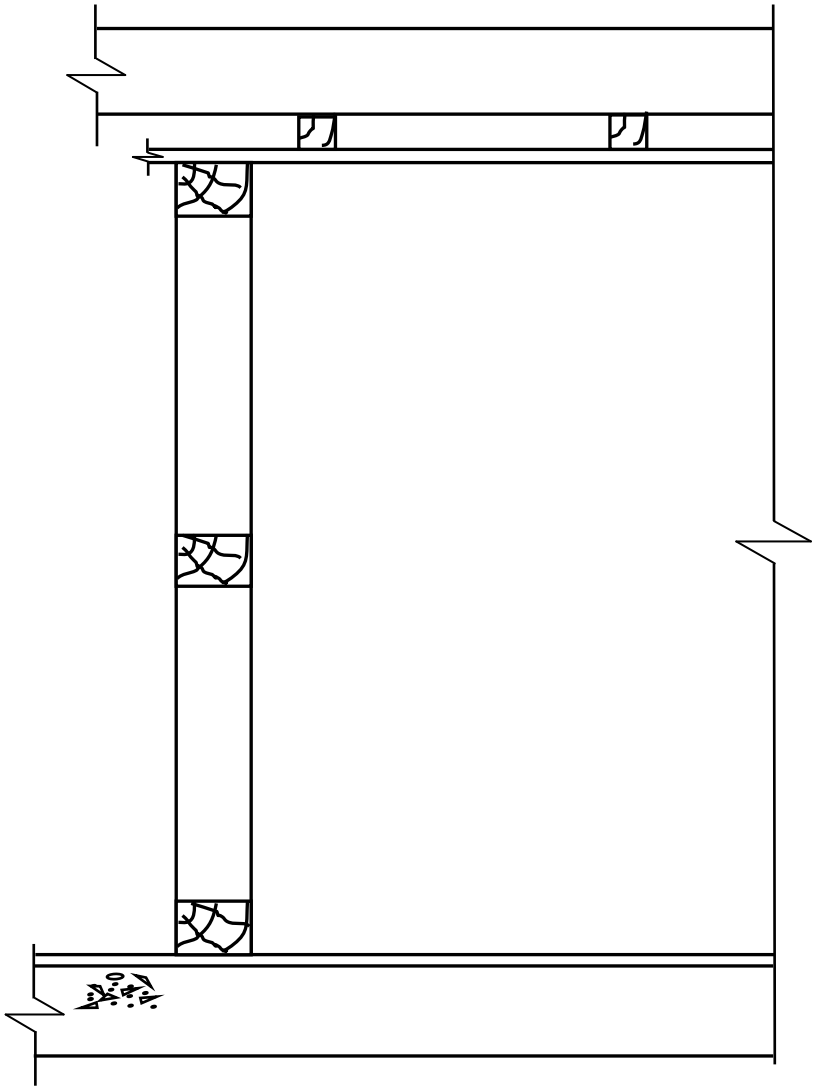

FIGURE 2.11

ASSESSMENT CRITERIA	MARK	CANDIDATE'S MARK
Cladding drawn correctly	1	
Moulding at ceiling and wall drawn correctly	1	
Moulding at floor and wall drawn correctly	1	
TOTAL	3	