4.5.2 Power Mechanics Paper 2 (447/2)

STATION 1

In the space below, sketch in good proportion an **exploded drawing** of a double-piston wheel cylinder braking system. (10 marks)

STATION 2

Use the materials, tools and equipment provided to make the sheet metal bracket shown in Figure 1. (10 marks)

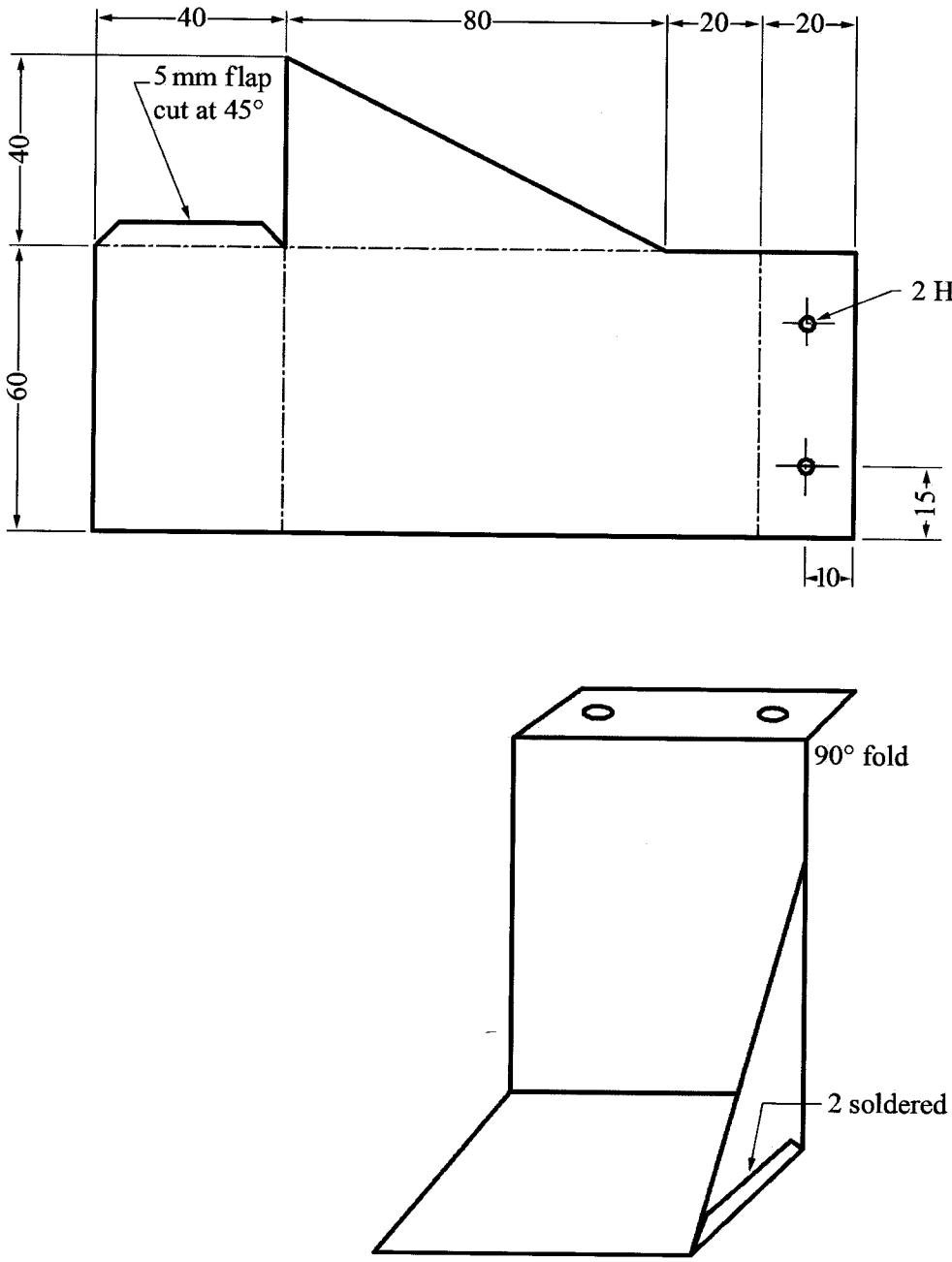

Figure 1

STATION 3

Identify the items labelled **A** to **E**. For each item, state the material it is made up of, and state its use in a motor vehicle. Complete the table below. (10 marks)

PART	NAME	VEHICLE SYSTEM	PURPOSE
A			
B			
C			
D			
E			

STATION 4

Using the multimeter and the ignition coil provided, perform the following tasks and make the appropriate conclusion in each case:

(i) Measure and record the resistance of the primary and secondary winding.

(ii) Test the coil for ground.

Complete the table below. (10 marks)

Measurement/Test	Reading (Ω)	Conclusion
Primary Winding Resistance		
Secondary Winding Resistance		
Coil Ground Resistance		

STATION 5

Using the materials, components and tools provided, perform the following tasks:

(i) Inspect the horn and comment on its mechanical condition. (1 mark)

(ii) Connect the horn circuit. Let the examiner see your work. (7 marks)

(iii) Adjust the sound to attain a smooth medium hooting. (2 marks)

STATION 6

Identify the vehicle parts labelled **F**, **G**, **H**, **I** and **J**. For each part, state the vehicle system it belongs to, identify **one** defect and **one** possible effect to the vehicle operation. Record your answers in the table below.

(10 marks)

PART	NAME	VEHICLE SYSTEM	DEFECT	EFFECT
F				
G				
H				
I				
J				

STATION 7

On the single cylinder engine provided:

(i) Service the air cleaner

(4 marks)

(ii) Demonstrate to the examiner how to check the quality of the spark produced by the spark plug.

(6 marks)

STATION 8

Using the tools provided, perform the following operations:

(a) Remove the float bowl of the carburettor provided.

(b) Remove the needle valve and show it to the examiner. Comment on its service condition.

(c) Take the necessary measurements to determine the following:

(i) Float level

(ii) Float drop

(d) Re-assemble the carburettor (10 marks)

STATION 9

Identify the tools labelled **P**, **Q**, **R**, **S** and **T**. For each tool, state its type, size and how it is used in a motor vehicle. Complete the table below. (10 marks)

TOOL	NAME	TYPE	SIZE	USE
P				
Q				
R				
S				
T				

STATION 10

On the multi-cylinder engine provided:

(a) Identify **four** parts driven by the fan belt and in each case, state which system it belongs to. (4 marks)

(b) Conduct visual checks on the following parts of the cooling system and in each case, comment on its service condition.

(i) Radiator cap ..... (1 mark)

(ii) Radiator hoses ..... (1 mark)

(iii) Radiator ..... (1 mark)

(c) Check the coolant levels in the radiator and its overflow tank and if necessary, top up to the required levels. (3 marks)