First Name: _____ Last Name: Short Answers -

Student #: _____

SHORT ANSWER QUESTIONS – ANSWER IN THE SPACES PROVIDED ON THE QUESTION PAPER.

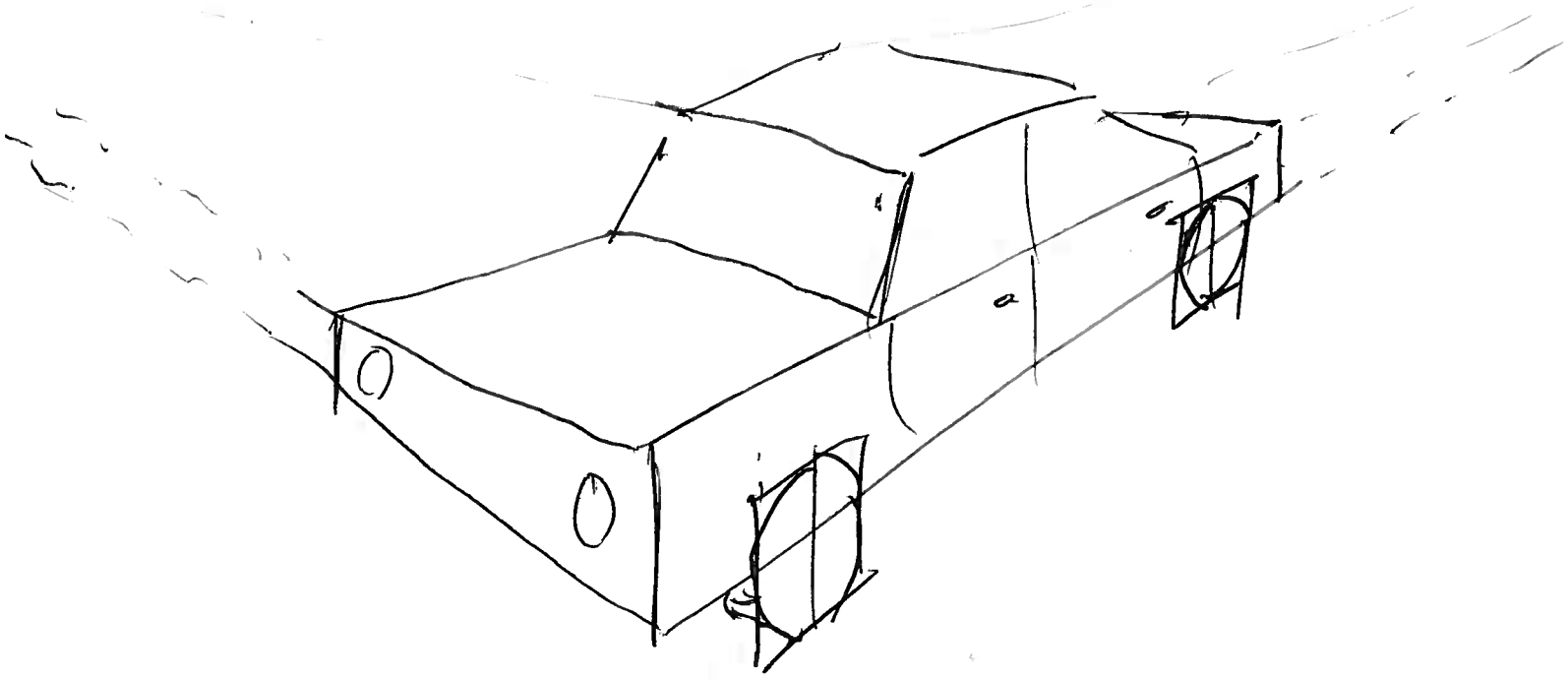
16. (1 mark) The best way to prepare for an extemporaneous prepared presentation is to:

Prepare a detailed outline (best)
Determine a purpose (good)
Analyse the audience (good)
Create a main statement (good)
Practice (good)

Create a main idea (good)
Create your slide deck (borderline)
(unacceptable) write a speech
(unacceptable) memorize a speech

1 ← 1/2] 0

17. (3 marks) Sketch an ordinary 4-door sedan (a passenger car like a Honda Accord) viewed at an angle so that you can see both the front windshield and both side doors. Use two-point perspective to make the drawing realistic, and show your construction lines (or guidelines).



1 mark for perspective → converging parallel lines

1 mark for representing round wheels correctly

1 mark for reasonable proportions

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18. (3 marks) A room air-conditioner is to be designed for minimal manufacturing and assembly cost. List three ways that you could accomplish this goal. Short bullet point answers are fine.

- minimize part count
- standardized fasteners
- quick connect fasteners
- design for automated assembly
- inexpensive processes (injection molding)
- low cost materials
- assemble in logical order.
- make parts easy to handle.

19. You are the industrial designer responsible for the external look and feel of a new line of power tools aimed at the serious home handyman.

a) (1 mark) How would you ensure that other companies don't sell copies of your design?

- design patent

b) (1 mark) If your target market wants to feel that the tools they are buying are more rugged and durable than cheaper versions on the market, how could you adjust the industrial design to accomplish that goal? Describe one feature you would add to the design.

Use visible signs of "toughness" oversize bolts, visible welds metal instead of plastic, industrial colours → bright yellow for example

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20. In an auto repair shop, cars are lifted to a height of 2 metres on mechanical or hydraulic lifts, so mechanics can work underneath them. The motors needed to move the lift would be activated by buttons on a control panel.

a) (4 marks) Design two safety features you could build into the system to reduce the chance of a mechanic from hurting herself while the lift is moving.

- move controls far from the lift
- use a light curtain
- use a fence for access → lift doesn't move unless gate is closed
- use motion detectors
- use a weight sensor → lift doesn't descend if loaded
- use warning siren, flashing lights

Any 2.

b) (1 mark) Design a safety feature that would prevent a mechanic from being hurt if someone else tries to move the lift while she is underneath it working on the car.

lockout system
(but some of the other methods above would also work.)

c) (1 mark) Write a one-sentence warning for users, to be placed on a label near the controls.

Ensure lift area is clear before moving the lift.

(simple direct language needed)