Ventilation and Air Conditioning Systems Assessment

Student Name: _____	**Class:** _____
Student ID: _____	**Date:** {{DATE}}

Assessment Details

Duration: 45 minutes	**Total Marks:** 100
Topics Covered:	• Ventilation Systems • Air Conditioning Systems • Air Quality and Comfort • Energy Efficiency

Instructions to Students:

1. Read all questions carefully before attempting.
2. Show all working out - marks are awarded for method.
3. Calculator use is permitted except where stated otherwise.
4. Write your answers in the spaces provided.
5. If you need more space, use the additional pages at the end.
6. Time management is crucial - allocate approximately 1 minute per mark.

Section A: Multiple Choice [20 marks]

Question 1 **[2 marks]**

What is the primary purpose of a ventilation system in a building?

A) To control temperature

B) To control humidity

C) To provide fresh air and remove stale air

D) To reduce energy consumption

Question 2 **[2 marks]**

Which of the following components is responsible for cooling the air in an air conditioning system?

A) Compressor

B) Condenser

C) Evaporator

D) Fan

Section B: Short Answer Questions [40 marks]

Question 3 **[5 marks]**

Describe the difference between a natural ventilation system and a mechanical ventilation system.

Question 4 **[5 marks]**

Explain the importance of air quality in buildings and how it affects human health.

Question 5 **[10 marks]**

What are the advantages and disadvantages of using a heat pump system for heating and cooling a building?

Section C: Project-Based Question [30 marks]

Question 6 **[30 marks]**

Design a simple ventilation system for a small office building. Include a diagram of the system and explain how it works. Consider the factors that affect indoor air quality and comfort.

Section D: Performance Task [40 marks]

Question 7 **[40 marks]**

Conduct an energy audit of a building and analyze the energy efficiency of its ventilation and air conditioning systems. Present your findings in a short report, including recommendations for improvement.