QUESTION ONE

a) Describe the mechanism of gene silencing in transgenic plants with virus resistance. (15)

b) Explain how infection of a plant with a virus triggers the mechanism of gene silencing. (10)

QUESTION TWO

Describe in detail all the steps you would take to develop a transgenic plant with virus resistance. (25)

QUESTION THREE

a) How would you design an experiment to demonstrate the gene(s)/sequence(s) of potato virus Y (PVY) that is/are involved in plant viral synergism? (15)

b) Using specific examples, explain how viruses overcome gene silencing during an infection process. (10)
QUESTION FOUR

In your opinion, is salicylic acid (SA) the chemical signal that triggers systemic acquired resistance (SAR) in virus infected plants showing a hypersensitive response (HR)? Support your answer with specific examples. (25)

QUESTION FIVE

a) Describe the processes involved during virus movement in susceptible plants. (15)

b) Explain why plants display the hypersensitive response (HR) phenotype in the context of plant virus movement. (5)

c) How can knowledge about plant virus movement be used to develop plants with virus resistance. (5)