

(a) Write a short essay (100 to 200 words) on the need of learning physics and chemistry for your program (Bachelor of Science in Environmental Studies). (5 marks)

(b) An airplane is flying horizontally with speed 1000 km/h (280 m/s) when an engine falls off. It takes 30 seconds for the engine to hit the ground.

(i) Neglecting air resistance, how high is the airplane? (5 marks)

(ii) How far horizontally does the engine travel while it falls? (5 marks)

(iii) If the air plane somehow continues to fly as if nothing had happened, where is the engine relative to the airplane at the moment the engine hits the ground? (5 marks)

Hints:

Read about linear motion and projectile motion.

Horizontal motion and vertical motion are independent