TEST: MEG 405: Applied Fluid Mechanics.   15 mins.   *Wed 23rd, Nov. 2022*

(a) Using sketch, describe a syphon system.   *(3 marks)*

(b) List two industrial application of nozzle.   *(2 marks)*

(c) What is the technical importance of a water hammer?   *(2 marks)*

(d) A horizontal pipe line 40 m long is connected to a water tank at one end and discharges freely into the atmosphere at the other end. For the first 25 m of its length from the tank, the pipe is 150 mm diameter and its diameter is suddenly enlarged to 300 mm. The height of water level in the tank is 8 m above the centre of the pipe. Sketch the pipe network. Considering all minor losses, determine the rate of flow. Take f = 0.01 for both sections of the pipe. Also, take water tank diameter as the *last three digits of matric. number* in mm   *(8 marks)*