

Student Name: _____

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1. Two reservoirs are connected by a pipe line which is 15 cm in diameter for the first 6 meters and 26 cm in diameter for the remaining 15 meters length. The entrance and exit are sharp and the change of section is sudden. The water surface in the upper reservoir is 6 meters above that in the lower reservoir. **Determine the losses of head which occur and calculate the rate of flow.** Take Darcy friction factor $f = 0.04$ for both the pipes. **Draw also the hydraulic gradient and the total energy gradient lines.** [20]

