

UNIVERSITI TEKNOLOGI MARA

**COMPARISON OF HEIGHTING BETWEEN TOTAL STATION
AND GPS BY USING AUTO LEVEL AS A REFERENCE IN UTM
PERLIS**

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Thesis submitted in fulfillment
of the requirements for degree of
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AUTHOR'S DECLARATION


I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. The project/dissertation is original and it is the result of my own work, unless otherwise indicated or acknowledged as reference work.

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ABSTRACT

In engineering and surveying, establishing a temporary bench mark (TBM) that have a reliable reduce level is extremely important since it contribute most of construction that is being done. This study is done to compare the heighting accuracy between total station and GPS with auto level serve as a reference. A total of 6 TBM is establish using fly leveling and these 6 TBM are re-observe using Total Station and GNSS levelling. Using the total station, the reduce level is transferred from reference point to all TBM using techeometry method. In GNSS leveling, a relative and absolute leveling method is used measure the orthometric height of each of the 6 TBM with fitted geoid as a reference surface. The values are compare with each other to reduce level (RL) that been establish using Auto level. The total station displays a wider range of errors from 0.13 m all the way to 0.004 m while the GNSS leveling gives a more consistence result from 0.011 m to 0.063 m. Thus, the total station give a more accurate result but low precision but that GNSS gives a high precision but lower accuracy

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