Physical state of methanol which is in the form of liquid and supported by some of combustion properties what is much the same to with gasoline enable methanol used as fuel at motor vehicle. This experiment was conducted to find out the engine performance and exhaust gas emission that were produce from gasoline and methanol blend.

The study has been done experimentally at the Combustion Engine Laboratory of Mechanical Engineering ITS on 4 stroke engine (107 cc Mahator). The experiment was carried out at full open throttle by varying compression ratio from 8.8:1 (standart) to 9.3:1 and 9.9:1. While composition of mixture of fuel used is 30% methanol + 70% gasoline of premium or referred as ordinary M30.

Result from experiment indicate that usage of fuel of M30 with compression ratio 9.9:1 showing result which better than fuel of premium with compression ratio standard (8.8:1), that is engine experience of increase of average value power, bsfc, and efficiency each equal to 6.3%, 3.19%, and 17.31%. While emission of CO and HC experience of degradation each equal to 44.78% and 4.88.

Keywords: methanol, compression ratio, performance, exhaust gas emission.