



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR FIRST SEMESTER EXAMINATION FOR

ARTISAN IN MECHANICAL ENGINEERING

TRADE THEORY

DATE: 18/4/2019

TIME: 11.30-2.30 PM

INSTRUCTIONS:

Answer all questions

QUESTION ONE (20 MARKS)

- a) Name any two types of petrol Engine (4 marks)
- b) What are the reasons for the use of multi-cylinder Engines in preference to single cylinder engines of equal power (4 marks)
- c) Draw a two stroke cycle petrol engine and name the parts (12 marks)

QUESTION TWO (20 MARKS)

- a) State the four strokes in a four stroke cycle engine (4 marks)
- b) With aid of sketches explain what takes place in the cylinder during each of the four strokes in Q2a above (16 marks)

QUESTION THREE (20 MARKS)

- a) State the function of water in the cooling of a running engine (3 marks)
- b) With the aid of a sketch explain thermo-siphon cooling system (17 marks)

QUESTION FOUR (20 MARKS)

- a) State the functions of a carburetor in a petrol engine (3 marks)
- b) State the proportion of air to petrol by weight, for the following operating conditions.
 - i. Starting
 - ii. Idling
 - iii. Maximum power
 - iv. Economy (4 marks)
- c) Describe briefly the construction of petrol tank. (13 marks)

QUESTION FIVE (20 MARKS)

Sketch a typical layout for a fuel system on a modern motor car. Indicate the positions and state the purpose of any flexible pipes shown in your sketch.