



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

DIPLOMA IN AUTOMOTIVE ENGINEERING
(DAE Y2 S2)

EAU 2205: ENGINE TECHNOLOGY II

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2014

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FOUR** questions. Attempt any **THREE** questions

Maximum marks for each part of a question are as shown

This paper consists of **FOUR** printed pages

Question One

- a) Describe FIVE forms of wear due to lack of lubrication. **(10 marks)**
- b) Explain FIVE functions that engine oil perform. **(5 marks)**
- c) Draw a gear-type oil pump and label the parts. **(5 marks)**

Question Two

- a) Describe THREE methods of heat transfer in engine cooling system. **(6 marks)**
- b) State THREE advantages of:
 - (i) Water Cooling System
 - (ii) Air Cooling System**(6 marks)**
- c) Neatly sketch the following radiator matrix types and briefly explain them:
 - (i) Honey comb
 - (ii) Cellular**(8 marks)**

Question Three

- a) Using a well-labelled diagram, describe the operation of the thermosyphonic system of water cooling. **(14 marks)**
- b) Outline THREE advantages and THREE disadvantages of thermosyphonic system of water cooling. **(6 marks)**

Question Four

- a) Draw an isometric view a diagram of diesel power plant that includes the following systems:
 - (i) Cooling system using a cooling tower
 - (ii) Fuel system which incorporate two tank one day tank
 - (iii) Compressed air starting system**(12 marks)**
- b) Illustrate steam supply system to a boiling pan that incorporate among others the following units:
 - (i) Flash tank
 - (ii) Separator
 - (iii) Pressure reducing value
 - (iv) Sight glass
 - (v) Steam traps
 - (vi) Strainers