

UNIVERSITY OF RUHUNA – FACULTY OF TECHNOLOGY

BACHELOR OF ENGINEERING TECHNOLOGY

Level II (Semester II) Examination, April 2019.

Course Unit: ENT2242 Basic Automobile Technology.

Time Allowed Two Hours

[Answer All (4) Questions, Each question carries 12.5 marks]

Q1) Answer the following questions base on automotive engines.

1. What are the **two** main classifications of engines? (2.5 marks)
2. Using clear diagram, identify the main components of an IC engine? (3.0 marks)
3. Briefly explain the **2-stroke** cycle engine operation and **4-stroke** cycle engine operation? (3.0 marks)
4. Briefly explain the following terminologies, considering the internal combustion engine.
 - I. Stroke
 - II. Dead Centre
 - III. Displacement Volume or Piston Swept Volume.
 - IV. Clearance Volume. (4.0 marks)

Q2)

1. What are the main parts of the Lubrication System? (2.5 marks)
2. What are the main types of Lubrication Systems used in vehicles? (2.0 marks)
3. Briefly Explain, what are the two types of the full pressure lubrication System? (4.0 marks)
4. Discuss the functions of the Lubrication System? (4.0 marks)

Q3)

1. What are the main components of a Braking System used in an automobile? (2.5 marks)
2. What are the main Parts of the ABS (Anti-Lock braking system)? Briefly explain the operation of ABS and list out the advantages of such a system.? (6.0 marks)
3. The gearing of a machine tool is shown in Figure Q3. The motor shaft is connected to gear A and rotates at 975 RPM. The gear wheels B, C, D and E are fixed to parallel shafts rotating together. The final gear F is fixed on the output shaft. What is the speed of gear F?
Number of teeth on each gear is given below.

$$T_A = 20, T_B = 50, T_C = 25, T_D = 75, T_E = 26, T_F = 65$$

(4.0 marks)

Q4)

1. Clearly draw a Battery Ignition System Diagram of an automobile and explain its operation? (6.5 marks)
2. Clearly state the differences between Battery Ignition System and Magneto Ignition System? (6.0 marks)

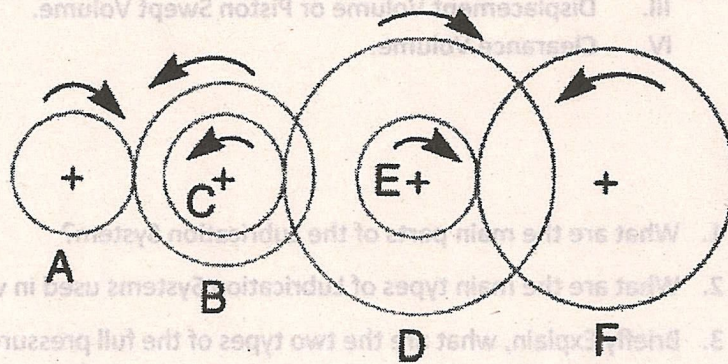


Figure Q3