



MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.

Department of Mechanical Engineering Question Bank - Academic Year (2020-21)

Course Code & Course Name : 19MEC08 & Automobile Engineering

Year/Sem/Sec : III / V / A

Unit-I: Introduction

Part-A (2 Marks)

1. State major types of automobiles according to the fuel used.
2. List any four components of a chassis
3. Mention any two requirements of an automobile
4. List any four characteristics of a good chassis.
5. Give any two requirements of a good frame
6. Define cross wind force
7. State any four functions of lubrication
8. State the purpose of providing a radiator in cooling systems.
9. Name any four air pollutants.
10. What do you mean by an Electronic Engine Management system?

Part-B (16 Marks)

1. Explain the construction of various frames used in automobiles with a neat sketch (16)
2. Discuss the principle of operation of a four stroke cycle S.I. Engine with a neat sketch (16)
3. With the help of a neat sketch explain in detail about the construction and working of different engine components? (16)
4. Sketch and explain different types of lubrication systems used in automotive engines. (16)
5. What are the desirable properties of a good lubricant? (16)

Unit-II :

Part-A (2 Marks)

1. What is a carburetor?
2. What are the requirements of a spark plug?
3. List out the main functions of a battery
4. What is a variable jet carburetor?
5. What is the function of an ORC in a starting motor?

6. Name the components of battery coil ignition system used in vehicle
7. What is the purpose of Cut-out relay?
8. What are the important units electronic fuel injection system?
9. Mention the two ways of determining the state of charge
10. What are the factors to be considered for comparing magneto and coil ignition system?

Part-B (16 Marks)

1. Describe the construction and working principles of Battery-Coil ignition system
2. What is carburetion? Explain principle of carburetor
3. Describe about Multi Point Fuel Injection System of an automotive engine
4. With the help of neat sketches explain in detail about Battery, Magneto coil and Electronic Ignition Systems.
5. Explain the working features of a starter motor with a neat diagram.

Unit-III :

Part-A (2 Marks)

1. What are the function of clutch?
2. What is the function of Synchronesh unit in a gear box?
3. State the function of differential unit.
4. What are the functions of universal joint?
5. List out the functions of a propeller shaft
6. Classify gear box.
7. Why epicyclic gears are used in overdrive units?
8. Why is double cluching technique used
9. How torque converter gearbox differs from fluid flywheel?
10. State the phenomenon of torque multiplication

Part-B (16 Marks)

1. Explain the construction and working principles of a typical auto mobile gear box
2. Discuss the working principles of (i) Torque tube drive. (ii) Hotchkiss drive.
3. Explain in detail about any one type of Synchronesh Gear Box with neat sketches
4. Explain with suitable sketches the operational features of sliding mesh gearbox.
5. What are the features of a good quality clutch? Explain the working of multi plate clutch

Unit-IV :

Part-A (2 Marks)

1. List out the types of front axle.
2. What is meant by bleeding of brakes?

3. Classify independent rear suspension system
4. What are the functions of suspension system?
5. Define slip angle
6. Define overall steering ratio
7. What is meant by centre point steering?
8. Define caster angle
9. What is meant by term 'tread'?
10. Compare the advantages of radial tyre over cross ply tyre

Part-B (16 Marks)

1. Sketch and explain the working of power steering system
2. Explain the working principles of Hydraulic braking system with simple sketches.
3. Explain the operation of Hydraulic braking system with neat sketch.
4. Explain in detail about a typical front suspension with neat sketches.
5. Discuss the working of telescopic suspension system used in cars.

Unit-V :

Part-A (2 Marks)

1. What is meant by a fuel cell and how it works?
2. List down the properties of alternate fuels.
3. State any two advantages of methane as fuel in automobiles.
4. What is meant by reformulated and oxygenated gasoline?
5. What is meant by reversible fuel cell?
6. Mention the various methods of storing hydrogen.
7. What is meant by transesterification?
8. Why biodiesel mixed with conventional diesel?
9. How can be fermentation process defined?
10. What are the advantages and limitations of alcohols as engine fuel?

Part-B (16 Marks)

1. Discuss the operation of an LPG propelled Automobile with neat sketch.
2. Explain the construction and working principle of Fuel cells, with simple sketches.
3. Explain the operation of Hydrogen fueled vehicle with neat sketch.
4. List out the different properties of hydrogen relevant to its use of I.C. Engines.
5. Explain the series and parallel hybrid drive trains. Discuss the drive system of an electric vehicle.