



KINGS

COLLEGE OF ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING

Sub - ME1353 AUTOMOBILE ENGINEERING YEAR / SEMESTER :III / VI

QUESTION BANK

UNIT 1

VEHICLE STRUCTURE AND ENGINES

PART A (2 MARKS)

1. State the difference between S.I and C.I engine
2. What is clearance volume? And what are its effects?
3. What is the function of piston, connecting rod , crank shaft and cylinder head?
4. What is the purpose of cooling system?
5. State the merits and demerits of air and water cooling system.
6. What is the purpose of lubricating system? State its types
7. What is meant by turbo charging?
8. What are the various pollutants in I.C engine? What are its effects?
9. What is meant by P.C.V ? and what are its effects?
10. What is a Catalyst?
11. Write down the firing order a 4 cylinder and 6 cylinder engine

PART B (16 MARKS)

1. Explain the construction and working principle of S.I and C.I engine
2. State the construction and working principle three way catalytic converter with neat diagram
3. Explain the construction and working principle of pressure lubrication system with neat diagram.
4. Explain the construction and working principle of any one type of water cooling system and state its advantages and disadvantages .
5. What are the various methods of controlling the HC and NOX emission present in I.C engine?
Discuss any one method
6. Explain the following terms a) Load distribution in frame, b) Frame type with neat sketch
c) Frame materials d) Frame testing

UNIT 2

ENGINE AUXILLARY SYSTEM

PART A (2 MARKS)

1. What is meant by carburetion in I.C engine?
2. What are the advantageous of electronic fuel injection system over conventional injection system ?
3. What are the functions of generator and starting motor
4. What is the function of ignition system in I.C engine
5. State the requirements of ignition system? And state its types
6. What is the ignition advance?
7. What are the difference between battery coil ignition and magneto ignition system?
8. What is the sealed head lamp system?
9. What is the function of carburetor?
10. What are the merits and demerits of mono point and multi point fuel injection system

PART B (16 MARKS)

1. Explain the construction and working principle of SOLEX Carburetor with neat diagram
2. Explain the construction and operation of lead acid battery neat diagram
3. What is the purpose of ignition system? Explain any one type with neat diagram.
4. Explain the electrical system of a typical Indian car
5. What is meant by compensation in carburetor? Explain any one method with neat diagram

UNIT 3

TRANSMISSION SYSTEM

PART A (2 MARKS)

1. What is the function of clutch?
2. What are the types of clutch? State its requirements.
3. What is the function of gear box? State its types.
4. Why is gear box necessary in automobile?
5. What is tractive effort
6. Why is sliding mesh gear box not preferred?
7. What is automatic transmission?
8. What is an over drive?
9. What is an universal joint? What are its types?

10. What is the necessity of a propeller shaft?
11. What is HOTCHKISS drive and TORQUE TUBE drive?
12. What is the function of differential unit?

PART B (16 MARKS)

1. Explain the construction and working principle of multi plate clutch with neat diagram
2. Explain the construction and working of synchromesh gear box with neat diagram
3. Describe the constant mesh gear box and how does it differ from sliding mesh gear box with neat diagram
4. Explain the construction and working differential with neat diagram
5. What are the various type of rear axle? Explain any one in detail with diagram

UNIT 4

STEERING BRAKES AND SUSPENSION

PART A (2 MARKS)

1. What is meant by wheel base and wheel tramp
2. What is a tyre? How is tyre constructed?
3. What is steering ratio?
4. What is camber? Why is camber angle provided?
5. What is toe in and toe out?
6. What are the types of steering gear box? State the function of gear box.
7. What are main advantages of power steering?
8. What is function of suspension system in automobile?
9. What is the function of brake? State its type.
10. What are the function of front axle? And what its function?

PART B (16 MARKS)

1. Why wheel alignment is necessary? Explain caster, camber, king pin inclination
2. Explain the construction and working of telescopic shock absorber with neat diagram
3. State the different types of steering box? Explain any one with neat diagram.
4. Sketch the air brake system in a motor vehicle and describe its working.
5. What is the purpose of front axle? Describe the live and dead front axle
6. Explain the construction and operation of hydraulic braking system with a neat sketch

UNIT 5

ALTERNATIVE ENERGY SOURCES

PART A (2 MARKS)

1. What are the alternative fuels? Give its characteristics.
2. Compare the properties of gasoline, CNG and LPG
3. What is meant by Hybrid vehicle?
4. What are fuel cells?
5. What are the various properties of gaseous fuel?
6. What is CNG?
7. What is BIO- DIESEL? State its advantages.
8. What are advantages of LPG over conventional fuels?
9. What are the disadvantages of using alcohol as an alternative fuel?

PART B (16 MARKS)

1. How is CNG better than Diesel from pollution view point
2. Describe the salient features of using LPG as an alternate fuel. Explain why hydrogen is considered as the most favorable fuel for future
3. Explain the difference between CNG and LPG used in I.C.engines.
4. Explain the advantages and disadvantages of BIO- DIESEL over conventional fuels used in I.C. engines.
5. Explain the construction and working of Hybrid vehicle with neat diagram