

Exam Date & Time: 12-Jan-2024 (02:30 PM - 05:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

SEVENTH SEMESTER B.TECH END SEMESTER EXAMINATIONS, JAN 2024

Automobile Engineering [MME 4063]

Marks: 50

Duration: 180 mins.

A

Answer all the questions.

Instructions to Candidates:

Answer ALL questions.

- 1) During routine car maintenance, the technician observed excessive wear on the cast iron cylinder and aluminium piston caused due to the thermal expansion of the piston. With a neat sketch, suggest any two suitable corrections for the issue. (4)
 - A)
 - B) With a neat sketch, explain the construction and working liquid cooling system that does not use a water pump to circulate the coolant. (4)
 - C) What is a carburettor? What are its functions? (2)
- 2) With a neat sketch explain the working of a single plate type clutch. (4)
 - A)
 - B) How do you overcome the difficulties associated with the carburettor when a vehicle is travelling at different speeds? Explain with a neat sketch. (3)
 - C) With a neat sketch, explain the working of an electric fuel pump. (3)
- 3) Differentiate between leaf and helical coil springs. (4)
 - A)
 - B) List any four differences between constant velocity and universal joints. (4)
 - C) What are the functions of a transmission system? (2)
- 4) With a neat sketch, explain the working of a leading and trailing shoe-type drum brake. (4)
 - A)
 - B) What is a scrub radius? Explain its effects. (3)

C) Differentiate between tubed and tubeless tyres. (3)

5) A car is subjected to emission testing but fails as it does not meet the emission standards. The service engineer identifies the escape of the fuel vapours into the atmosphere to be the primary reason. Suggest a system to control the same and with a neat sketch explain its working. (4)

A)

B) Discuss the various possible electric vehicle configurations with the help of a conceptual illustration. (4)

C) What are the factors that affect the combustion process in the engine cylinder? (2)

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