

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019**

**Course Code:AU364**  
**Course Name: -Vehicle performance and testing**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any three full questions, each carries 10 marks.*

Marks

- |   |   |            |
|---|---|------------|
| 1 | What are the important performance parameters of an IC Engine? Explain them.  | (10)       |
| 2 | Explain the working of any two types of dynamometers used for IC Engine testing.  | (10)       |
| 3 | a) What are different sources of pollution in homogenous charge SI engine? Explain it in brief.<br>b) How the A/F ratios affect the CO, HC and NO <sub>x</sub> emission in SI engine? | (5)<br>(5) |
| 4 | a) What is the purpose of wheel alignment?<br>b) Explain how wheel alignment is done using computerized wheel alignment machine.  | (4)<br>(6) |

**PART B**

*Answer any three full questions, each carries 10 marks.*

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|---|---|------|
| 5 | Write a note on engine noise and vibration. List down its causes and Explain how it can be reduced. | (10) |
| 6 | Write short notes on noise from auxiliaries, wind noise, transmission noise and structural noise.   | (10) |
| 7 | a) Describe the sources and causes of soot and particulate emission.                                | (6)  |

- b) Write notes on Indian emission norms (4)
- 8 a) Explain the effects of traffic condition and driving habits on fuel economy. (6)
- b) How the efficiency of a diesel vehicle is influenced by the load conditions? (4)

**PART C**

*Answer any four full questions, each carries 10 marks.*

- 9 a) Difference between on road vehicle testing and lab testing (4)
- b) List down various test tracks used for testing of automobile and Explain it in detail. (6)
- 10 Explain in brief about Passive safety. Also list different Passive safety systems used on automobiles and write their purposes. (10)
- 11 a) Explain how the crash testing of vehicles are carried out. (5)
- b) What is the meaning of crash worthiness? Explain it in brief. (5)
- 12 a) Briefly explain about the wind tunnel testing of automobiles (6)
- b) Explain how head light alignment is done on a passenger car. (4)
- 13 a) What is PDI? Explain it with a typical example for a passenger car (6)
- b) Give a brief note on the working of a side slip tester. (4)
- 14 What is a chassis dynamometer? Explain different vehicle tests that can be conducted on it. (10)

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