

Code No: **R1942243**

R19

Set No. 1

IV B.Tech II Semester Regular Examinations, April– 2023

CERTIFICATION AND HOMOLOGATION

(Automobile Engineering)

Time: 3 hours

Max. Marks: 75

*Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks*

UNIT I

- 1 a) Detail about the Stipulated rule no. 126, as per Government of India. And present the issues pertaining as per rule no. 126. [7]
b) Illustrate the process of regulations formulation and describe about the present regulatory system in India. [8]

(OR)

- 2 a) Present an overview of Regulations of ECE, EEC, FMVSS. [7]
b) Brief the technical points of the model / variants to be submitted by vehicle Manufacturer for approval and confirmation of production. [8]

UNIT II

- 3 a) Brief discuss about the methods available for improving the performance of an engine. [7]
b) List the factors which will affect the rate of turn and the size of turning circle and explain them. [8]

(OR)

- 4 a) What is the effect of speeds and weights of travelling vehicles on the road surface temperature. [7]
b) Present the challenges confronted by the performance engineering departments in automotive industry. [8]

UNIT III

- 5 a) Explain about the any three test tracks with the help of neat sketches. [7]
b) Describe about the Science Behind Ride & Handling automobiles. [8]

(OR)

- 6 a) How automobile wind tunnels are different from aeronautical wind tunnels explain with the help of neat sketches. [7]
b) Detail about the Hill climbing method of testing automobile power and performance characteristics. [8]



UNIT IV

- 7 a) How safety belt protects the life of the persons in cars, what is the impact force it can sustain during accident. [7]
b) Explain the importance of Side door intrusion test and occupant protection impact test. [8]

(OR)

- 8 a) What are the recent developments made in protection of vehicle from side impacts and occupant protection. [7]
b) How to analyse the effect of slip angle on fatigue life of wheel rim of passenger car using radial fatigue testing. [8]

UNIT V

- 9 a) Illustrate the Hydraulic brake fluid systems in automobiles. [7]
b) What is ISO 26262? Why is ISO 26262 automotive industry safety standard important? Detail it. [8]

(OR)

- 10 a) What regulations are to be imparted for motor vehicles manufactured or imported on and from the 1st day of April, 2006 in accordance with AIS:050:2004 59a. [7]
b) Compare the standards of AIS testing standards, Euro Standards and SAE standards. [8]

