

Code No: 157AQ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, February/March - 2022****AUTOMOBILE ENGINEERING****(Mechanical Engineering)****Time: 3 Hours****Max. Marks: 75****Answer Any Five Questions
All Questions carry equal marks**

- 1.a) What are the main components of automobile which contribute for efficient functioning? Explain.
- b) What is the need of fuel filter and explain various filters used in practice? [8+7]
- 2.a) Explain the need of frequent over handling of engine and what are the various oils to be replaced.
- b) What are the functions of lubricating system an engine and explain various methods of engine lubrication? [8+7]
- 3.a) What is the necessity of engine cooling and explain the relative advantages of various cooling methods?
- b) What are the various anti-freeze solutions used in practice for efficient working in cold environment? Describe the importance. [8+7]
- 4.a) What are the benefits of electronic ignition system over magneto-ignition system? Explain.
- b) How the storage batteries are changed? When a battery be discarded? [8+7]
- 5.a) What are the various factors affect the performance of clutch while transmitting power from engine to transmission system? Explain.
- b) Differentiate between plate clutch and cone clutch, mentioning the principle of working and applications. [8+7]
- 6.a) Explain with a neat sketch the construction and working of universal joint and discuss its applications.
- b) How the steering geometry affect the performance of a car? [8+7]
- 7.a) What are the properties to be considered in the selection of braking fluid used in automobiles? Describe the importance.
- b) Differentiate between Hydraulic and vacuum brakes used in the power transmission.[8+7]
- 8.a) How the multi-point injection system in S.I engines reduce the air-pollution? Explain.
- b) What are the advantages and disadvantages of using hydrogen as fuel in the automobiles? Describe methods to store the hydrogen. [7+8]

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