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Code No. : 41415 AE

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (Mech. Engg.) IV Year I-Semester Main Examinations, December-2017

Automobile Engineering

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

1. List out the functions of engine inlet and exhaust manifolds.
2. What is the purpose of petrol injection? What are its limitations?
3. Name the engine parts of a car which require lubrication.
4. What is an anti-freeze? Name a few commonly used anti-freeze compounds.
5. Explain the main requirements of a steering system? How the steering system ensures smooth running of an automobile?
6. Classify some of the advantages and disadvantages of independent suspension system.
7. Identify the functions of the propeller shaft and universal joint in an automobile.
8. Explain the working of a Wheel cylinder.
9. How to control Evaporative emission in an automobile?
10. What is engine overhauling?

Part-B (5 × 10 = 50 Marks)

11. a) Distinguish an automobile with the other self-propelled vehicles. [4]
b) With a neat sketch explain the functions of cylinder liners. How they are classified? What are its merits and demerits? [6]
12. a) With a neat sketch explain the working principle of dry sump lubrication system. [5]
b) Differentiate between battery ignition system and coil ignition system. [5]
13. a) With the help of neat sketch summarize the working principle of Rack and Pinion type steering mechanism. [5]
b) Show in detail constructional features of the tubes and tubeless tyres for automotive use. Discuss also their relative merits and demerits. [5]
14. a) Discuss the principle of a torque convertor and list out its advantages and disadvantages. [6]
b) What purposes are served by the master cylinder in the hydraulic braking system? [4]
15. a) What is meant by EGR? What for it is used? Explain the method with a neat schematic diagram. [5]
b) How does an automobile contribute towards pollution of the atmosphere? Illustrate various methods to reduce the emissions of pollutants in exhaust gases [5]
16. a) Summarize on fuel cell technology. [5]
b) Draw the layout of air conditioning system for a car and explain its working. Describe briefly the function of each component. [5]
17. Answer any *two* of the following:
a) What is toe in and toe out? Explain with suitable sketch. [5]
b) Define an Anti-locking braking system. List out its advantages. [5]
c) List the name of pollutants emitted by S.I & C.I engines. How it differs from S.I & C.I engines? [5]

