

SUBJECT CODE NO:- P-276
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (Mech) Examination MAY/JUNE-2016
Automobile Engineering
(Revised)

[Time: Three Hours]

[Max Marks:80]

“Please check whether you have got the right question paper.”

- N.B
- 1) Solve any three questions from each section
 - 2) Assume suitable data wherever found necessary.

Section A

- Q.1 a) List the main components of an automobile and with a neat sketch show the layout of these components on a front engine, all four wheel drive vehicle. 08
- b) What one the recent developments in the engine used in automobiles, to cope up with the euro norms? Give the main criteria's considered for the selection of an engine for the vehicle. 05
- Q.2 a) With a neat sketch explain the construction and working of a diaphragm spring, single plate clutch used in the vehicles. 07
- b) With neat sketch explain the construction of a friction – clutch plate used in single plate clutch. 06
- Q.3 a) What is the function of an automobile gear box? What are the types of gear arrangements used in automobile gear box? Explain each of them in brief. 08
- b) With neat sketch explain the construction & working of a torque converter, used in automobiles. 05
- Q.4 a) What is the function of an automobile suspension? Give the classification of the automobile suspension. 07
- b) With neat sketch explain the construction and working of a wishbone parallel link independent suspension. 06
- Q.5 Write short notes on any three of the following 14
- a) Purpose of clutch in a automobile.
 - b) Resistances considered in a vehicle for selection of power requirement of the engine.
 - c) Over drive in the gear box.
 - d) Hydraulic shocks absorber
 - e) Anti-roll bar used in a vehicle.

Section B

- Q.6 a) What is a steering geometry? With neat sketches shown the caster, camber, K.P.I, scrub radius, included angle. Explain the significance of each of them. 08
- b) With neat sketch explain the construction and working of racks and pinion steering gear. 05
- Q.7 a) What is wheel alignment? What are the effects of misalignment of the steering in the automobile? Why wheels are balanced while wheel alignment is carried out? 07
- b) What is power steering? Explain with neat sketch hydraulic power steering. 06
- Q.8 a) What are the different types of brakes used in the automobiles? With neat sketch explain the construction and working of disc brakes. 07
- b) With neat sketch in a sectional view. Explain the construction & working of a tandem master cylinder? What are the advantages of its use? 06

- Q.9 a) With neat sketch explain the wiring diagram of the ignition and charging system of a petrol engine used in vehicles. 06
- b) With a block diagram explain the air conditioning system used in cars. How does it differ from the domestic air conditioning systems? 07
- Q.10 Write short notes on any three of the following. 14
- Automobile tyres
 - Antilock brake system (ABS)
 - Brake shoes used in hydraulic drum brake system.
 - Battery used in automobiles.
 - Euro norms for automobiles.