

17211(N)

B. Tech 5th Semester Examination

Automobile Engineering (CBS)

ME-505

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all selecting one question from each of the sections A, B, C & D and all the subparts of the question in Section-E.

SECTION - A

1. (a) Discuss various components mounted on the chassis frame of an automobile. (5)
(b) Draw schematic diagram showing the layout of transmission system of a front engine rear wheel driven car. (7)
2. (a) Discuss the functions of a clutch. (2)
(b) Where and why do we use multiplate clutch? Discuss. (2)
(c) Explain the working of a single plate clutch with the help of a simple diagram. (8)

SECTION - B

3. (a) Explain the functions of a synchronizer. (3)
(b) Describe the working of a synchromesh gear box with the help of a neat sketch. (9)
4. (a) Distinguish between semi floating and fully floating rear axles. (4)

- (b) Discuss the construction and operation of a differential with suitable sketches. (8)

SECTION - C

5. (a) Discuss the factors influencing ride comfort. (4)
(b) Explain the function and construction of a leaf spring and how it is mounted on rear with the help of a sketch. (8)
6. (a) Describe the steering linkage for a vehicle with independent suspension. <https://www.hptuonline.com> (8)
(b) Discuss the factors of wheel alignment. (4)

SECTION - D

7. (a) Discuss various methods of brake actuation. (4)
(b) Describe the construction and working of a disc brake with the aid of diagrams. (8)
8. (a) Draw cross section of an automobile tyre and show its various constructional features. (6)
(b) Write a comprehensive note on maintenance of batteries. (6)

SECTION - E

9. Attempt all the parts.
 - (a) What are different types of loads coming on a chassis frame?
 - (b) What is the purpose of pressure plate in a clutch?
 - (c) What is the function of a transfer box?
 - (d) What is a shock absorber?
 - (e) Define camber and caster.
 - (f) What is the function of an alternator? (2×6=12)