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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Automobile Engineering) (2011 Onwards) (Sem.-5)

AUTOMOTIVE TRANSMISSIONS

Subject Code : BTAE-502

Paper ID : [A2062]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A**1. Write briefly :**

- a. How do you calculate the torque transmission capacity of a clutch?
- b. List the advantages of diaphragm clutch.
- c. What is the need of gear box in a vehicle?
- d. What are the functions of transfer case?
- e. Why is propeller shaft made as hollow?
- f. Compare live axle and dead axle.
- g. Write the difference between single reduction and final reduction drives.
- h. What is the need of differential lock?
- i. Compare hydrodynamic drive and hydrostatic drive.
- j. What are the advantages and limitations of electric drive?

SECTION-B

2. Discuss in detail about the construction and working of single plate coil spring type clutch with neat sketch.
3. Discuss the various factors affecting torque transmission in a clutch.
4. Explain with a neat figure the construction and working of a typical hydrostatic transmission. Explain the construction and working of a constant mesh gear box. Highlight the advantages and disadvantages over the sliding mesh gear box.
5. With layout explain the electric transmission system and its limitations.
6. Sketch and explain the single stage torque converter. How does it differ from a fluid flywheel?

SECTION-C

7. Sketch and explain the principle of epicyclic gearing. Mention its advantages.
8. Discuss about the different components of a typical automatic transmission with neat sketches in detail.
9. Write short notes on the following :
 - a) Advanced transmission used in recent vehicle.
 - b) Double declutching.
 - c) Transfer box.
 - d) Over drives.
 - e) Phase and stage in torque converter.