

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]  
(2125)

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**B. Tech 7th Semester Examination**  
**Automotive Transmission (NS)**  
**AU-413**

**Time : 3 Hours**

**Max. Marks : 100**

*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 :** Candidates are required to attempt five questions in all selecting one question from each of the section A, B, C and D of the question paper and all the subparts of the questions in section E. Use of non-programmable calculators is allowed.

**SECTION - A**

1. (a) Classify the transmission system and explain multi axel drives. (10)
- (b) What is the difference between mechanical and hydraulic modes of operating a clutch? (10)
2. (a) Explain chain, shaft and electric drives. (10)
- (b) Explain with the help of diagrams about working of centrifugal clutch. (10)

**SECTION - B**

3. What is the need for double declutching? Also explain working of synchromesh type of gear box. (20)
4. Explain significance of gear ratio. Also explain the gear shifting mechanism. (20)

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**SECTION - C**

5. What is torque capacity? Explain the construction and working principle of a torque converter. (20)
6. (a) Explain the principle of hydrostatic drive system. Also explain the advantage and limitations of it. (10)
- (b) Explain the principle and construction of fluid coupling. (10)

**SECTION - D**

7. (a) Explain Chevrolet "Turbo-glide" transmission system. (10)
- (b) Explain working of Hydraulic actuation system. (10)
8. Explain the modified Ward Leonard Control System. Also write its advantage and limitation. (20)

**SECTION - E**

9. Write short note on the following:
  - (i) Location of transmission system.
  - (ii) Working of Automatic clutch.
  - (iii) Difference between dry and wet type clutch.
  - (iv) Sliding type gear box.
  - (v) Multistage torque converters.
  - (vi) Converter coupling.
  - (vii) Hydraulic Actuation system.
  - (viii) Working of over-running clutch.
  - (ix) Method for reduction of drag torque.
  - (x) Centrifugal clutch. (2×10=20)