

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

21AU54

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Automotive Transmission

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Briefly discuss the various resistance to motion of the automobile. (10 Marks)
b. Explain the following:
(i) Traction and tractive efforts (ii) Draw bar pull (10 Marks)

OR

- 2 a. Discuss the necessity of the gear box in a automobile. (10 Marks)
b. Explain with a neat sketch construction and working of a constant mesh gear box. (10 Marks)

Module-2

- 3 a. Briefly discuss the clutch materials used in an automobile. (10 Marks)
b. Sketch and explain the single plate clutch with its working. (10 Marks)

OR

- 4 a. What is one-way clutches? Explain any two types. (10 Marks)
b. Sketch and explain the fluid coupling. (10 Marks)

Module-3

- 5 a. Explain the construction and working of Wilson planetary transmission. (10 Marks)
b. What is overdrive? Explain its use in automobile. (10 Marks)

OR

- 6 a. Discuss the performance of a torque convertor. (10 Marks)
b. An epicyclic gear train is shown in Fig.Q6(b). The number of teeth on A and B are 80 and 200. Determine the arm A. If A rotates at 100 rpm clockwise and B at 50 rpm CCW.

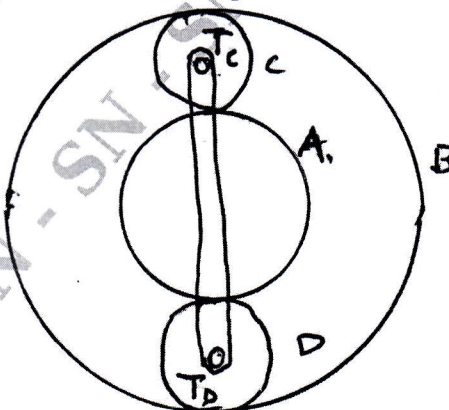


Fig.Q6(b)

(10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, $42+8=50$, will be treated as malpractice.

Module-4

- 7 a. Explain the function of the hydraulic control in an epicyclic planetary gear system. (10 Marks)
b. Write short notes on:
(i) Plunger type pump
(ii) Hydrostatic drives (10 Marks)

OR

- 8 a. With a neat diagram, explain the working of Borge Warner automatic transmission system. (10 Marks)
b. Explain briefly the working of hydramatic transmission. (10 Marks)

Module-5

- 9 a. Explain the necessity of a differential in an automobile. Discuss in detail the construction of differential. (10 Marks)
b. Explain the electric vehicle transmission configuration. (10 Marks)

OR

- 10 a. Briefly explain the modelling the electromechanical system. (10 Marks)
b. Explain briefly the PM-DC machine. (10 Marks)
