



CBCS SCHEME

15AU64

Sixth Semester B.E. Degree Examination, Jan./Feb. 2023 Automotive Transmission

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. What is the need of clutch? What are the requirements of good clutch? (08 Marks)
b. With a neat sketch, explain the construction and working principle of single plate clutch. (08 Marks)

OR

- 2 With neat sketch, explain:
(i) Multi-plate clutch
(ii) Vacuum operated clutch (16 Marks)

Module-2

- 3 a. With the help of neat sketches, discuss the working of sprag and roller type of over running clutch. (08 Marks)
b. With suitable sketch, discuss the working of fluid coupling and also mention the advantages. (08 Marks)

OR

- 4 a. Define torque converter. Explain the working of torque converter with neat sketch. (08 Marks)
b. Discuss the performance characteristics of torque converter with neat sketch. (08 Marks)

Module-3

- 5 a. Explain the following terms in brief:
(i) Gradability
(ii) Tractive effort
(iii) Draw bar pull
(iv) Traction (08 Marks)
b. Describe the working of constant mesh gear box with the help of neat sketch. (08 Marks)

OR

- 6 a. With neat sketch, explain construction and working of synchromesh gear box. (08 Marks)
b. A four speed gear box is to be constructed for providing the ratios of 1.0, 1.46, 2.28 and 3.93 to 1 as nearly as possible. The diametral pitch of each gear is 3.25 mm and the smallest pinion is to have at least 15 teeth. Determine the suitable number of teeth of the different gears. What is then the distance between the main and lay shaft? (08 Marks)

Module-4

- 7 a. With neat sketch, explain Wilson planetary transmission system. (08 Marks)
b. What is over drive? Explain the construction and working of an overdrive with a neat sketch. (08 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.

OR

- 8 a. Explain the principle of operation of a planetary transmission system with neat sketch. (08 Marks)
b. With a neat sketch, explain Ford-T model gear box. (08 Marks)

Module-5

- 9 a. List out different hydrostatic drives and explain the basic working principle of same. (10 Marks)
b. What are the advantages and limitations of hydrostatic drives? (06 Marks)

OR

- 10 a. With neat sketch, explain Borge-Warner automatic transmission system. (08 Marks)
b. Compare hydrostatic drive with hydrodynamic drives. (08 Marks)

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