

# CBCS SCHEME

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## Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024 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. What is the need of a clutch? What are the requirements of a good clutch? (10 Marks)  
b. Sketch and explain the construction and working of single plate clutch. (10 Marks)

OR

- 2 a. Describe the construction and working of a multiplate clutch, compare the merits and demerits over single plate clutch. (10 Marks)  
b. List out the clutch troubles and give appropriate remedies. (10 Marks)

### Module-2

- 3 a. With a neat sketch, explain the construction and working principle of a fluid flywheel. (10 Marks)  
b. Discuss with a neat sketch the construction features and working of overrunning clutch. (10 Marks)

OR

- 4 a. Define torque converter. Explain the working of multistage torque converter. (10 Marks)  
b. Differentiate between fluid coupling and Torque converters. (10 Marks)

### Module-3

- 5 a. Explain the various resistances offered to motion of an automobile with performance curve. (10 Marks)  
b. Describe the following :  
i) Drawbar pull  
ii) Acceleration  
iii) Gradeability. (10 Marks)

OR

- 6 a. Explain the construction and working of sliding mesh gear box with neat sketch. (10 Marks)  
b. What is the necessity of gearbox in an automobile? Describe the working of synchromesh gearbox. (10 Marks)

### Module-4

- 7 a. Explain the principle of operation of a planetary transmission system with a neat sketch. (10 Marks)  
b. Explain the working principle of a Wilson planetary transmission system with a neat sketch. (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.

OR

- 8 a. What is Overdrive? Explain the construction and working of an overdrive with a neat sketch. (10 Marks)
- b. An epicyclic gear consists of three gears A, B and C as shown in Fig Q8(b). The gear A has 72 internal teeth and gear C has 32 external teeth. The gear B meshes with both A and C and is carried on an arm EF which rotates about the centre of A at 18rpm. If the gear A is fixed. Determine the speed of gear B and C.

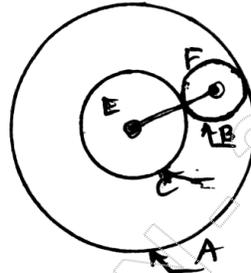


Fig Q8(b)

(10 Marks)

**Module-5**

- 9 a. Indicate the different system of hydrostatic drives and explain. (10 Marks)
- b. Explain the basic four speed hydraulic control system with neat diagram. (10 Marks)

OR

- 10 a. With a neat diagram, explain the working of Borg Warner Automatic transmission. (10 Marks)
- b. Write the advantages and disadvantages of automatic transmission. (10 Marks)

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