CBCS SCHEME

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18AU55

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.***

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-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)**

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.

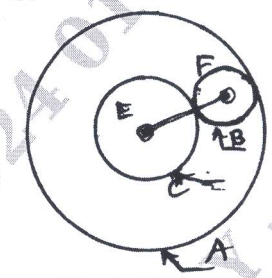

Fig Q8(b) **(10 Marks)**

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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