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Fifth Semester B.E. Degree Examination, July/August 2022
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 necessity of clutch in an Automobile? Write the requirements of the clutch. (10 Marks)
b. With neat diagram, explain the Single Plate Clutch's construction and working. (10 Marks)

OR

- 2 a. Explain the Hydraulic Operated Clutch, with neat block diagram. (10 Marks)
b. What are the different troubles may occur in the Clutches? Explain how we can correct it. (10 Marks)

Module-2

- 3 a. With a neat diagram, explain the working of Sprag and Roller of over running clutch. (10 Marks)
b. With the help of graph, discuss the performance characteristics of torque converter. (10 Marks)

OR

- 4 a. With a neat diagram, explain the construction and working of Fluid Coupling. (10 Marks)
b. Differentiate between Fluid Coupling and Torque Converter. (10 Marks)

Module-3

- 5 a. Explain the various resistance offered to motion of an Automobile with performance curves. (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 gear box in an Automobile? Describe the working of synchromesh gearbox. (10 Marks)

Module-4

- 7 a. Explain the Wilson gear box, with neat diagram. (10 Marks)
b. In an epicyclic gear train as in Fig. Q7(b), an arm carries two gear A & B having 36 & 45 teeth respectively. If the arm rotates at 150 rpm in the anticlockwise direction about the centre of a gear A which is fixed. Determine the speed of gear B. If gear A instead of being fixed, makes 300 rpm in clockwise direction, what will be the speed of gear B? (10 Marks)

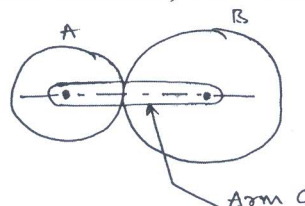


Fig. Q7(b)

OR

- 8 a. What is Overdrive? Explain its use in Automobile. (10 Marks)
b. Explain Hydraulic control in Planetary gear system. (10 Marks)

Module-5

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

OR

- 10 a. Indicate the different system of Hydrostatic drives. Explain the working principle of constant displacement pump and constant displacement motor. (10 Marks)
b. Explain the basic four speed Hydraulic Control System, with neat diagram. (10 Marks)
