CBCS SCHEME

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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.

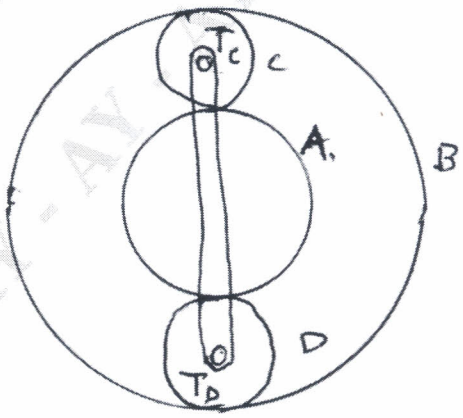

Fig.Q6(b) **(10 Marks)**

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)**

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