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Sixth Semester B.E. Degree Examination, Feb./Mar. 2022 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. List the common clutch troubles. Explain their causes and remedies. (08 Marks)
b. With neat sketch, explain construction and working of electromagnetic clutch. (08 Marks)

OR

- 2 With neat sketch, explain the following:
a. Semi-Centrifugal clutch
b. Hydraulic clutch. (16 Marks)

Module-2

- 3 a. Sketch and explain the construction and working principle of fluid flywheel. (08 Marks)
b. With the help of graph, discuss the performance characteristics of a torque converter. (08 Marks)

OR

- 4 a. What is uni-directional clutch? Explain any two with neat sketch. (08 Marks)
b. With neat sketch, explain the construction and working principle of torque converter. (08 Marks)

Module-3

- 5 a. Briefly discuss the various resistance to motion of the automobile. (08 Marks)
b. With neat sketch, explain construction and working of sliding mesh gear box. (08 Marks)

OR

- 6 a. Explain the following terms in brief,
i) Gradiability
ii) Tractive effort
iii) Draw bar pull
iv) Traction. (08 Marks)
b. With neat sketch, explain constant mesh gear box. (08 Marks)

Module-4

- 7 a. With neat sketch, explain working principle of Ford-T model gear box. (08 Marks)
b. What is overdrive? Explain the construction and working of an over drive with 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. With neat sketch, explain Wilson planetary transmission. (08 Marks)
- b. The Fig.Q.8(b) shows an epicyclic gear train in which arm 'A' is fixed to shaft 'S'. 'B' is freely rotating on 'S' and 'F' is separately driven. 'A' receives 10kW at 200rpm and F is driven in the same direction at 100rpm. Determine: (08 Marks)
- Number of teeth on gear 'C'
 - Speed of gear B
 - Torque on gear B.

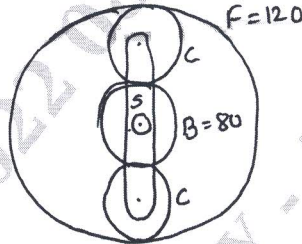


Fig.Q.8(b)

Module-5

- 9 a. Write a short note on:
- Constant displacement pump and constant displacement motor. (08 Marks)
 - Variable displacement pump and variable displacement motor. (08 Marks)
- b. What are the functions, advantages and limitations of hydrostatic drives? (08 Marks)
- OR
- 10 a. With neat sketch, explain Borge-Warner automatic transmission. (08 Marks)
- b. Write a short note on:
- Constant displacement pump and variable displacement motor. (08 Marks)
 - Variable displacement pump and constant displacement motor.
