



B.E DEGREE EXAMINATIONS: MAY 2017

(Regulation 2014)

Sixth Semester

AUTOMOBILE ENGINEERING

U14AUT603: Automotive Transmission

COURSE OUTCOMES

- CO1:** Recognize and understand the different types of layouts in Automotive Power Transmission
CO2: Distinguish the various types of Resistances for Automotive propulsion.
CO3: Apply the knowledge handling different types of transmission and achieving maximum efficiency
CO4: Analyze the various benefits and limitations of different types of drives used in Automobiles.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Match list I with list II and select the correct answer using the Parts given below the list: CO1 [K₂]

List I		List II	
A. Flywheel		1. Low speed gear	
B. Driven gear		2. Transmission shaft	
C. Driven gear		3. Primary gears	
D. Brake drum		4. Reverse Drum	
		5. Pinion	

- | | A | B | C | D |
|----|---|---|---|---|
| a) | 3 | 2 | 4 | 5 |
| b) | 5 | 4 | 2 | 1 |
| c) | 4 | 1 | 2 | 3 |
| d) | 5 | 2 | 4 | 3 |

2. Tandem drive vehicle has _____ CO2 [K₂]
- a) two drive axles at front b) no drive axle
 c) two drive axles at rear d) one drive axle at rear

10. Wilson Gear box consists of _____ Epicyclic gear trains. CO4 [K₂]
a) 1 b) 2
c) 3 d) 4

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11. State the principle of friction clutch. CO1 [K₂]
12. Mention some of the key requirements of an Automotive Transmission system. CO1 [K₂]
13. When does maximum torque multiplication occur in torque converter? CO3 [K₂]
14. What is Gear Ratio? CO2 [K₂]
15. What are hydrodynamic drives? CO4 [K₂]
16. Draw the performance curves of Fluid coupling. CO3 [K₂]
17. How a CVT can improve performance of a vehicle? CO3 [K₂]
18. State the merits & demerits of Automatic Transmission. CO1 [K₂]
19. Define Hydrostatic drives? CO4 [K₂]
20. What are the disadvantages of Electrical vehicles? CO2 [K₂]

Answer any FIVE Questions:-

PART C (5 x 14 = 70 Marks)

(Answer not more than 300 words)

Q.No. 21 is Compulsory

21. Explain about the resistances experienced by a vehicle on a motion and also explain how it influences on vehicle performance. CO3 [K₃]
22. Explain the principle of torque converter with its merits and demerits. CO2 [K₂]
23. Sketch a Wilson gearbox and explain its working. CO3 [K₂]
24. Explain the construction and operation of a Ford T-model gearbox. CO3 [K₂]
25. Discuss in detail about the evolution of automatic transmission for automobiles. CO1 [K₂]
26. Draw and explain the working of CVT with its advantages and limitations. CO4 [K₂]
27. Explain in detail about the different drive trains of Electrical vehicle with neat sketches. CO4 [K₂]
