



B.E DEGREE EXAMINATIONS: APRIL/ MAY 2016

(Regulation 2013)

Sixth Semester

AUTOMOBILE ENGINEERING

U13AUT603: Automotive Transmission

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Gear ratio in automotives is the ratio of engine speed to _____
 - a) Steering speed
 - b) Crankshaft speed
 - c) Propeller shaft speed
 - d) Camshaft speed
2. _____ is used to engage and disengage the power from engine to the transmission system.
3. Automatic transmission _____ is used to increase/decrease torque.
 - a) Final drive
 - b) Torque converter
 - c) Propeller shaft
 - d) Actuator
4. Slip is defined as the power difference in speed between _____ & _____
5. Hydrostatic Motors are used in _____ transmission.
 - a) Wilson
 - b) Manual
 - c) Ford T Model
 - d) CVT
6. The torque available at the contact between driving wheels and road is known as _____
7. The material which is used for reinforcement in CVT belt is _____
 - a) Copper
 - b) Steel
 - c) Tin
 - d) Aluminum
8. In a four wheel drive (4WD) _____ gearbox is used to split the power.
9. In Janney hydrostatic drive the no of cylinders used is _____
 - a) 8
 - b) 9
 - c) 6
 - d) 10
10. _____ type of hydrostatic drive system is used in tractors.

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11. Mention some of the key requirements of an Automotive Transmission system.

12. What are the different types of resistances for automotive propulsion?
13. Differentiate Torque converter and Fluid coupling.
14. Draw the efficiency curve of a hydrodynamic torque converter.
15. Name the different components of Ford-T-Model gearbox.
16. What is a planetary gearbox?
17. What are hydrostatic drives?
18. What is slip percentage in CVT?
19. Distinguish between Constant and Variable displacement Pumps.
20. Give some of the advantages of Electric drives.

PART C (5 x 14 = 70 Marks)
(Answer not more than 400 words)

Q.No. 21 is Compulsory

21. Explain with a layout of single plate clutch mechanism.

22. (a) Explain the working principle of a synchromesh gearbox with neat sketches.

(OR)

(b) With the help of a neat diagram explain the working of fluid coupling clutch.

23. (a) Explain Ford Model T Gear box with a neat sketch and also explain how different gear ratios are achieved.

(OR)

(b) Explain the working of Wilson gearbox with necessary sketches and discuss about its limitations.

24. (a) Draw and explain the working of CVT with its advantages and limitations.

(OR)

(b) Discuss in detail about the evolution of automatic transmission for automobiles.

25. (a) Discuss about the different combinations of hydrostatic drive with its applications.

(OR)

(b) Explain the working of electrical vehicle with a neat layout diagram.
