

21AU54

Fifth Semester B.E. Degree Examination, June/July 2024 **Automotive Transmission** 

Time: 3 hrs.

Max. Marks: 100

	N	lote: Answer any FIVE full questions, choosing ONE full question from each	h module.
		Module-1	
	a.	Explain the need of transmission and power for propulsion with diagram.	(10 Marks)
	b.	Describe the various resistance to motion of the automobile.	(10 Marks)
		OR	
2	a.	Determine the gear ratio of a four speed gear box for a vehicle of weight 133	41.6N powered
		by an engine giving 20.6kW at 1800 rpm. The vehicle has a frontal area 2	.23m and has a
		wheel dia. 0.71m. The maximum gradient that the car has to negotiate is 1 in	4. The tractive
		resistance may be taken as 50N per 2240N of the car. The wind resistant 0.03679NV <sup>2</sup> where A is the frontal area in M <sup>2</sup> and V is the value area in	ice is given by
		0.03679NV <sup>2</sup> , where A is the frontal area in M <sup>2</sup> and V is the vehicle speed in that the transmission efficiency is 0.75 and that at top gear, the car is expect	km/nr. Assume
		grade of 1 in 40. State any other assumptions you make.	
	b.	Explain with neat sketch Constant Mesh gear box.	(10 Marks) (10 Marks)
		The state of the s	(10 Marks)
		Module-2	
3	a.	What is the necessity of clutch, requirement of clutch and clutch materials?	(10 Marks)
	b.	Explain with neat sketches of Cone and Centrifugal clutch.	(10 Marks)
		OR	
4	a.	Explain the working fluid requirements and its characteristics.	(10 Marks)
	b.	Explain with neat sketch, fluid coupling and advantages, limitations and appli	
			(10 Marks)
		Module-3	
	a.	Explain with neat sketch of components of Automatic transmission system.	(10 Marks)
	b.	Explain Epicyclic gear train with neat sketch.	(10 Marks)
	4		(101711110)
	- 9	OR	
5	a.	Explain with sketch Ford. T. Model gear box.	(10 Marks)
	b.	Explain with sketch of Overdrives.	(10 Marks)
ç		Module-4	
	a.	Explain constant and variable displacement pump and motor with sketches.	(10 Marks)
	b.	Explain with layout of hydraulic control system.	(10 Marks)
		OR	
	a.	Explain basic four speed hydraulic control system.	(10 Marks)
	b.	Explain neat sketch, Hydramantic transmission system.	(10 Marks)
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## Module-5

9 a. Explain the Construction and Working of Automobile differential.

b. Explain the configuration of EV. (10 Marks)

## OR

10 a. Explain Construction and Working of PM - DC Machine.
b. Explain the Construction and Working of WF - DC Machine
(10 Marks)
(10 Marks)