CBCS SCHEME

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BAU306B

Third Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Automotive Transmission

Time: 3 hrs. Max. Marks: 100

Note: **1.** ***Answer any FIVE full questions, choosing ONE full question from each module.***
2. ***M : Marks , L: Bloom's level , C: Course outcomes.***

		Module – 1	M	L	C
Q.1	a.	Discuss the various resistances to motion of the automobile.	10	L2	CO1
	b.	Briefly explain the draw bar pull and acceleration gredability.	10	L2	CO1
		OR			
Q.2	a.	Sketch and explain the construction and working principle of synchromesh gear box.	10	L2	CO1
	b.	Briefly discuss the functions of the transmission.	10	L2	CO1
		Module – 2			
Q.3	a.	Discuss briefly the requirement of the clutch in an Automobile.	10	L2	CO2
	b.	Derive the uniform wear rate for a single plate clutch.	10	L3	CO2
		OR			
Q.4	a.	List out the types of clutches. Explain any one type of clutch used in automobile.	10	L2	CO2
	b.	With a neat sketch, explain the fluid coupling.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain the construction and working of ford T model gear box.	10	L1	CO3
	b.	Define Overdrive. Explain its use in Car.	10	L1	CO3
		OR			
Q.6	a.	Briefly, explain the performance of a torque convertor.	10	L2	CO3
	b.	The input shaft of an epicyclic type of gear box has two sun wheel each with 25 teeth splined to the shaft. Their corresponding annular ring have 100 teeth each the output shaft has a sun running free on that shaft with 40 teeth while the corresponding annular ring has 80 teeth. Calculate the direct, second and reverse gear ratios.	10	L4	CO3
		Module – 4			
Q.7	a.	Discuss the functioning of the hydraulic control in an epicyclic planetary gear system.	10	L2	CO3
	b.	Explain the following : i) Constant displacement pump and constant displacement motor ii) Variable displacement pump and variable displacement motor	10	L2	CO3

OR					
Q.8	**a.**	Briefly explain the hydrostatic drives.	**10**	**L2**	**CO3**
	b.	With a neat diagram, explain the working of Borge Warner automatic transmission system.	**10**	**L2**	**CO3**
Module – 5					
Q.9	**a.**	Write a short note on : i) Gears ii) Clutch iii) Automobile differential iv) Brakes	**10**	**L2**	**CO4**
	b.	Explain the electric vehicle transmission configuration.	**10**	**L2**	**CO4**
OR					
Q.10	**a.**	Briefly explain the modeling the eletromechanical system.	**10**	**L3**	**CO4**
	b.	Briefly explain the DC – DC power converter.	**10**	**L2**	**CO4**

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