Register Number:……..

B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2018)

Fifth Semester

MECHANICAL ENGINEERING

U18MEE0011**:** Automobile Engineering

COURSE OUTCOMES

CO1: Explain the vehicle structures, lubrication, cooling and emission control systems.

CO2: Summarize the various fuel injection, ignition and electrical systems of an automobile

CO3: Describe the working principle of various components in transmission systems

CO4: Discuss the various steering mechanisms and suspension systems.

CO5: Compare the conventional and antilock braking systems.

CO 6: Discuss the usage of various alternate energy sources in automobiles

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

1.	Classify automotive vehicles based on chassis	CO1	[K_2]
2.	Illustrate about electronic engine management system	CO1	[K_2]
3.	Outline the working of a simple carburetor	CO2	[K_2]
4.	List the main types of starting drives used in automobiles	CO2	[K_2]
5.	Summarize the importance of overdrives	CO3	[K_2]
6.	Write about differential lock	CO3	[K_2]
7.	List the types of suspension springs	CO4	[K_2]
8.	What are the two brakes widely used in automobiles?	CO5	[K_2]
9.	What are off road vehicles?	CO6	[K_2]
10.	Interpret the use of electric vehicles over conventional vehicles based on energy input	CO6	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Explain the working of turbochargers	8	CO1	[K_2]
	b)	Discuss about electronic engine management system in automobiles	8	CO1	[K_2]
12.	a)	Explain battery ignition system with neat sketch	8	CO2	[K_2]
	b)	Extend the working of carburetor to fuel injection system by stating the limitations of carburetor and the advantages of fuel injection systems.	8	CO2	[K_3]
13.	a)	Classify types of clutches used in automobiles and explain any one with neat sketch	8	CO3	[K_2]
	b)	Explain the working of Hotchkiss drive with diagram	8	CO3	[K_2]
14.	a)	Discuss the following steering geometry: camber, caster Toe in and Toe out	8	CO4	[K_{3z}]
	b)	Infer the distinct advantages of power steering over the manual steering	8	CO4	[K_2]
15.		What are the types of braking systems? and explain Anti Lock Braking system in detail	16	CO5	[K_2]
16.		List the uses of various alternative energy resources in automobiles and explain hydrogen fuel cells	16	CO6	[K_3]

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