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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE  
(AUTONOMOUS)

IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023  
AUTOMOTIVE CHASSIS AND SUSPENSION SYSTEMS  
(AME Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

**PART-A**

Answer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) List the condition for True Rolling Motion.	[2M]	1	
	b) State Driving Thrust and its effects.	[2M]	2	
	c) What are the types of Tyres?	[2M]	3	
	d) List the requirement of Suspension System,	[2M]	4	
	e) Define braking torque.	[2M]	5	

**PART-B**

Answer **One** Question from each UNIT (5X10=50M)

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	Explain castor, camber and king-pin inclination with neat sketch.	[10M]	1	
OR				
3.	Discuss in detail about types front axle and stub axle.	[10M]	1	
UNIT-II				
4.	Describe about Hotchkiss drive and Torque tube drive with sketches.	[10M]	2	
OR				
5.	a) Discuss the non-slip differential with diagram.	[5M]	2	
	b) Explain the types of final drive.	[5M]	2	
UNIT-III				
6.	a) Explain the fully floating axle assembly with neat diagram.	[5M]	3	
	b) Discuss about the types of load acting on drive axles.	[5M]	3	
OR				
7.	Discuss in detail about the different types of wheels and tires with respect to construction, advantages and disadvantages.	[10M]	3	
UNIT-IV				
8.	a) Discuss arrangement and working of torsion bar with neat sketch. Give its application.	[5M]	4	
	b) Discuss in detail about construction of coil system.	[5M]	4	
OR				
9.	a) Explain the hydro-elastic suspension with neat diagram.	[5M]	4	
	b) Discuss the construction and characteristics of single leaf spring.	[5M]	4	
UNIT-V				
10.	Write short notes on the following: (i) Anti-lock braking system (ii) Effect of weight transfer during braking.	[10M]	5	

OR					
11.	a)	Explain the construction details of drum brakes.	[5M]	5	
	b)	Discuss in detail about servo brakes.	[5M]	5	

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