

Hall Ticket Number:

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Code No. : 16531 B

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (Mech. Engg.) VI-Semester Main & Backlog Examinations, June-2022

Automotive Chassis Components (PE-I)

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	Compare integral body construction and chassis body construction	2	3	1	3
2.	Why channel section with its web in vertical orientation is preferred for the side member of ladder type frames?	2	2	1	3
3.	What are the requirements of a Steering System?	2	1	2	5
4.	What do you mean by Wheel Wobble?	2	1	2	3
5.	What is the function of propeller shaft? Name its parts	2	1	3	2
6.	Why differential locks essential for automobile?	2	2	3	3
7.	Distinguish the advantages of coil spring over leaf spring?	2	4	4	3
8.	What is the need of Suspension system in an automobile?	2	1	4	2
9.	What do you mean by Antilock Braking?	2	1	5	5
10.	List out the advantages of Air Brake System?	2	1	5	3
Part-B (5×8 = 40 Marks)					
11. a)	Explain the constructional details of a Box-section type car frame with a line diagram.	5	2	1	2
b)	What are the materials used for chassis frames and body?	3	1	1	2
12. a)	List out the different types of Front Axles.	4	2	2	2
b)	With a suitable diagram explain Davis steering geometry.	4	1	2	3
13. a)	Illustrate the construction and working of a Differential.	4	2	3	3
b)	Describe about any one of the Double reduction and twin speed final drives with sketch.	4	2	3	3

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14. a)	Describe arrangement and working of Torsion Bar with neat sketch.	4	2	4	3
b)	Summarize the construction and working of Rubber Suspension System.	4	2	4	3
15. a)	Classify Automobile Brakes	4	3	5	3
b)	Illustrate the functions of main parts of a master cylinder with the aid of a diagram.	4	3	5	3
16. a)	Compare the merits and demerits of frameless construction over frame type construction in case of cars?	4	4	1	2
b)	With neat sketch explain Electronic Power Assisted Steering.	4	1	2	3
17.	Answer any <i>two</i> of the following:				
a)	Explain about the construction and working of Full Floating Axles with neat sketch.	4	2	3	2
b)	Summarize the construction and working of a Shock Absorber.	4	2	4	3
c)	Discuss Recent advancements in Braking System.	4	2	5	3

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level - 1	28.7%
ii)	Blooms Taxonomy Level - 2	51.2%
iii)	Blooms Taxonomy Level - 3 & 4	20.1%
