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Code No. : 16531 (B) AS

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (Mech. Engg.) VI-Semester Advance Supplementary Examinations, August-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.	List out the types of Chassis frame?	2	1	1	2
2.	What are the frame sections used in Automobiles?	2	2	1	2
3.	What is meant by Under Steer and Over Steer	2	2	2	2
4.	What is meant by wheel wobbling?	2	2	2	2
5.	What do you mean by trans-axle? Give its advantages.	2	2	3	2
6.	Write the name of gears of a differential which are supported by pinion shaft	2	1	3	2
7.	Explain the functions of suspension system?	2	1	4	2
8.	Write about sprung weight and un sprung weight?	2	2	4	4
9.	What does stopping distance mean?	2	2	5	2
10.	Draw a line diagram of Brake by wire system	2	2	5	1
<b>Part-B (5 × 8 = 40 Marks)</b>					
11. a)	Draw the layout of conventional Chassis with a neat diagram and explain about various parts on it?	4	3	1	2
b)	Describe the types of chassis layout with reference to power plant locations and drives with a neat sketch.	4	3	1	2
12. a)	Describe the Ackerman steering system. What is the role of caster for operation of steering?	4	4	2	2
b)	What is the effect of poor wheel alignment on cornering force and side thrust on the handling of vehicle?	4	4	2	4
13. a)	Write short notes on the construction detail and working of semi floating axle shaft.	4	3	3	2
b)	Explain the construction and working of Non- slip differential.	4	4	3	2

14. a)	What are the types of Independent suspension system and explain about Double wish bone type of front independent suspension with a neat sketch?	4	4	4	4
b)	Explain briefly with a neat sketch about following contents: a) stabilizer bar. b) Torsion bar	4	3	4	4
15. a)	Explain the construction and working of Hydraulic brakes?	4	3	5	1
b)	Write short notes on the working of Retarded Engine Brakes, Eddy Retarders.	4	3	5	2
16. a)	Draw the layout of Unitized Chassis with a neat diagram and explain about various parts on it?	4	3	1	2
b)	What is meant by Steering Geometry and explain with neat sketches?	4	2	2	4
17.	Answer any <i>two</i> of the following:				
a)	Describe the torque converter with a neat sketch	4	2	3	2
b)	Illustrate the construction and working of single acting, telescopic, hydraulic shock absorber with a neat sketch?	4	2	4	1
c)	Explain the Construction and working of Air brakes?	4	2	5	2

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

i)	Blooms Taxonomy Level – 1	7.5%
ii)	Blooms Taxonomy Level – 2	37.5%
iii)	Blooms Taxonomy Level – 3 & 4	55%

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