

Roll No.:

SGT UNIVERSITY

END TERM THEORY EXAMINATION JULY-2022

Faculty/College of Study:	Engineering & Technology	Year/Semester:	6 th Semester
Program:	B.Tech. (ME)	Duration:	03:00 Hrs.
Course/Subject:	Chassis Design	Maximum Marks:	60
Course/Subject Code:	13030612	Batch:	2019

Instructions:-

1. Write Your Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided correct question paper. Complaint(s) in this regard, if any should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. All Questions are compulsory. Marks are indicated against each question.
4. Illustrate your answer with diagram wherever required.

SECTION-A

(Very Short Answer Type Questions)

Note: All Questions are compulsory: -

[12X1=12 Marks]

S. No.	Question	Marks Allotted
1	What is dead axle?	1
2	Define Chassis layout.	1
3	What is rubber spring rate?	1
4	What is front axle beam?	1
5	What are the basic requirements of chassis?	1
6	What are the different types of chassis?	1
7	What are the main components of chassis?	1
8	What is the difference between Chassis and Frame?	1
9	What is cone clutch?	1
10	What is torque capacity of clutch?	1
11	What is gearbox layout?	1
12	What do you understand by the speed range in a gearbox design?	1

SECTION-B
(Short Answer Type Questions)

Note: All Questions are compulsory: -

[4X2=8 Marks]

S. No.	Question	Marks Allotted
13	Define different types of chassis used in automobiles.	2
14	Define turning circle, state its approximate values for a car and a bus.	2
15	What is the function stub axle and king pin in front axle?	2
16	What is fading of brakes?	2

SECTION-C
(Descriptive Answer Type Questions)

Note: All Questions are compulsory: -

[4X4=16 Marks]

S. No.	Question	Marks Allotted
17	Discuss different methods of supporting live rear axle shafts.	4
18	How the torques is divided by the differential between the wheels on turns?	4
19	How is chassis designed? Explain.	4
20	What are the important characteristics when designing a chassis?	4

SECTION-D
(Long Answer Type Questions)

Note: All Questions are compulsory: -

[4X6=24 Marks]

S. No.	Question	Marks Allotted
21	Explain Camber angle, Castor angle, Steering axis inclination, toe-in & toe-out. Discuss their effects on steering characteristics of vehicle.	6
22	What are the factors on which the design of frame for passenger and commercial vehicle depends?	6
23	Explain the designing of leaf spring-coil spring and torsion bar springs.	6
24	Why do we need anti-locking braking system in automobile? Sketch and explain working of anti-lock braking system and list its merits and demerits.	6