

Roll No. 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech. (AE) (Sem.-3)**  
**AUTOMOTIVE CHASSIS & COMPONENTS**

Subject Code : AE-203

Paper ID : [A0703]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students has to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students has to attempt any **TWO** questions.

**SECTION-A****1. Write briefly :**

- a. How many live axles are there in 6×4 driven vehicle?
- b. What is re-circulating ball screw and sector gear mechanism?
- c. What is reason of over steering?
- d. What are advantages of all wheel drive vehicles over front wheel drive vehicles?
- e. Write the name of gears of a differential which are supported by pinion shaft.
- f. What do you mean by transaxle? Give its advantages.
- g. What are asymmetrical tyres?
- h. Which type of braking system is used in two wheelers with the help of brake oil?
- i. What is shock absorber?
- j. What is dead axle?

**SECTION - B**

2. Describe the Ackerman steering system. What is the role of caster for operation of steering?
3. What is drum braking system? Explain with the help of diagram.
4. Write short notes on the construction detail and working of semi floating axle shaft.
5. Explain the construction and working of Non-slip differential.
6. Write the disadvantages of solid rubber tyres over tubed tyres.

**SECTION-C**

7. a. What is multi link suspension system? (3)  
b. What is double wishbone suspension system? Where it is used? (7)
8. Describe in detail the construction and working details of servo brake system. (10)
9. a. How scrub radius affect the wear and tear of the tyres and steering effort? (5)  
b. What is the effect of poor wheel alignment on cornering force and side thrust on the handling of vehicle? (5)