

Reg. No. \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**THIRD SEMESTER B.TECH DEGREE EXAMINATION, JULY 2017**

Course Code: **AU 203**Course Name: **AUTO CHASSIS (AU)**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any three questions.*

1. a. What is integral chassis construction? what are its advantages? (6)  
b. What are the various loads acting on a chassis frame? (4)
2. What are the advantages of tubeless tyres over conventional tyres? Describe the construction of a tubeless tyre with a diagram, (10)
3. Which is the better cross section for a propeller shaft of an automobile and why? (5)  
b. What is the significance of a radius rod in automobile? (5)
4. With the help of neat sketches describe the types of rear axle drives. (10)

**PART B**

*Answer any three questions.*

5. With the help of sketches, explain the various loads acting on Semi-floating and Fully-floating axles. (10)
6. Describe the working and construction of an automobile differential. (10)
7. a. What is sprung weight, its effect on comfort and performance of ride? (3)  
b. Explain various types of springs used for automobile suspension system. (7)
8. a. What is independent suspension system and explain any four types? (8)  
b. Which type of independent suspension system is preferred for major sedans and hatchbacks and why? (2)

**PART C**

*Answer any four questions.*

9. With the help of sketches describe the working of a power assisted steering. (10)
10. Explain the following steering gears with the help of diagrams.  
a) Rack and Pinion. (5)  
b) Worm and Nut. (5)
11. a. Show the linkages involved in transmitting force from steering wheel to road wheels? (7)  
b. What are the requirements of a steering system? (3)
12. a. ABS is an active safety measure. Justify. (4)  
b. Explain hydraulic braking system. (6)
13. The effort required for braking a modern vehicle while the engine is running is less than when it is off, what is the reason behind it explain with sketches? (10)
14. Describe classifications of brakes based on construction. (10)

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