

Code No: RT41031

**R13****Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February/March - 2018

**AUTOMOBILE ENGINEERING**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

*Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) How can turbo-charging improve performance of an engine? [4]
- b) Why it is important to maintain tyre pressure? [4]
- c) What is centre point steering? [3]
- d) What are basic requirements of braking fluid? [4]
- e) Explain why engines should not be sub-cooled. [3]
- f) Explain why pollution standards have to be maintained. [4]

**PART-B (3x16 = 48 Marks)**

2. a) Explain how a four wheel drive mechanism offers better power transmission in a automobile. [8]
- b) Draw and explain with a simple sketch, pressurized lubrication system with its relative advantages. [8]
3. a) What is the necessity for clutch assembly in transmission system and explain the construction and working of a single plate clutch. [8]
- b) Explain with a simple sketch, working of differential in a automobile. [8]
4. a) Define camber, castor, king pin rake angles and their significance in steering geometry. [8]
- b) With the help of a schematic diagram, explain Ackerman steering mechanism. [8]
5. a) Explain the functioning of independent front wheel suspension system with torsion bar in a automobile. [8]
- b) Explain with a suitable schematic diagram, working of hydraulic braking system in a vehicle. [8]
6. a) What is ABS and how does ABS helps in improving uncontrolled skidding? [8]
- b) Why bull bars are being discouraged legally by Indian government – comment? [8]
7. a) Briefly discuss the mechanism of formation of pollutants in engine exhaust. [8]
- b) Discuss the tests that a crank shaft should be subjected to before re-installation in a engine. [8]