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**Question Paper Code : X 60856**

B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC. 2020  
Sixth Semester  
Mechanical Engineering  
ME 2354/10122 ME 604/ME 62 – AUTOMOBILE ENGINEERING  
(Regulations 2008/2010)

(Common to PTME 2354 – Automobile Engineering for B.E. (Part-Time) Fifth Semester  
– Mechanical Engineering – Regulations 2009)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

**(10×2=20 Marks)**

1. Give the typical specifications of an automobile.
2. Why a gear box is required in an automobile ?
3. Define the term turbo charging.
4. What is meant by variable choke carburetor ?
5. Name the types of clutches.
6. Why slip joint is important ?
7. Why is camber angle provided in steering system ?
8. What causes vapour lock in a braking system ?
9. What are the advantages of Hybrid vehicle ?
10. Mention the advantages of LPG usage in automobiles.

**PART – B****(5×16=80 Marks)**

11. a) i) Discuss the frame type chassis construction with neat sketch. (8)  
ii) Explain about any two types of stub axles. (8)  
(OR)
- b) i) Write about king pin inclination. (8)  
ii) Discuss about toe-in and toe-out. (8)
12. a) Explain electronically controlled CRDI system for Diesel injection. (8)  
(OR)
- b) i) Write short notes on Turbocharger. (6)  
ii) Discuss engine emission control measures for SI engines. (10)
13. a) i) What is meant by clutch ? List out the requirement. (4)  
ii) Explain the construction and operation of single plate coil spring clutch. (12)  
(OR)
- b) Discuss the following with simple sketch.  
i) Fluid flywheel (8)  
ii) Differential unit. (8)
14. a) i) Explain the principle of operation of a power steering system with a neat sketch. (8)  
ii) With a sketch explain the operation of a telescopic type shock absorber. (8)  
(OR)
- b) i) Discuss the different types of front axles. (8)  
ii) With a neat sketch explain the principle of operation of antilock braking system. (8)
15. a) Explain in detail about the electrical vehicle system with a block diagram. (16)  
(OR)
- b) Explain the modifications required in SI and CI engines to employ alternate fuels to produce on par performance combustion and emission characteristics of conventional engines. (16)
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