

Reg. No. :

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**J 3319**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Sixth Semester

(Regulation 2004)

Mechanical Engineering

ME 1353 — AUTOMOBILE ENGINEERING

(Common to Production Engineering)

(Common to B.E. (Part-Time) – Fifth Semester Mechanical Engineering –  
Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention any four engine components along with materials.
2. What is the principle of turbo charger?
3. Explain the importance of cut outs.
4. What are the advantages of electronic fuel injection system?
5. What do you know about over drive?
6. Distinguish between single and multi plate clutch.
7. What is the need of antilock braking system?
8. What is Ackermann steering principle?
9. On what principle are fuel cells working?
10. Compare LPG and CNG cars working principles.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What do you know about emission norms? Discuss. (7)  
(ii) With a neat sketch explain the working features of 3 way catalytic controller. (9)

Or

- (b) (i) With a block diagram discuss the operational features of electronic engine management system. (9)  
(ii) Explain the working of pressure lubrication system. (7)

12. (a) (i) Explain the working features of a starter motor with a neat diagram. (8)  
(ii) Sketch and explain electronic type ignition system. (8)

Or

- (b) With suitable sketches explain mono point and multi point fuel injection systems and bring out the comparative features. (16)

13. (a) Explain with suitable sketches the operational features of sliding mesh gearbox. (16)

Or

- (b) Discuss the following with simple sketches  
(i) Torque tube drive (8)  
(ii) Differential working (8)

14. (a) Sketch and explain a typical power steering gear box and compare it with ordinary steering system. (16)

Or

- (b) Discuss the working of telescopic suspension system used in cars. (16)

15. (a) With a layout diagram explain the working features of hybrid vehicles. (16)

Or

- (b) Write short notes on : (2 × 8 = 16)  
(i) Electric vehicles  
(ii) Bio diesel concept in vehicles.