

Faculty of Engineering & Technology
Seventh Semester B.E. (Mech.)/Seventh Semester
B.E.P.T. (Mech.) Examination
AUTOMOBILE ENGINEERING

Elective—I

Sections—A & B

Time : Three Hours]

[Maximum Marks : 80

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INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Answer **THREE** questions from Section A and **THREE** questions from Section B.
- (3) Due credit will be given to neatness and adequate dimensions.
- (4) Assume suitable data wherever necessary.
- (5) Illustrate your answers wherever necessary with the help of neat sketches.

SECTION—A

1. (a) Describe with neat sketch the working of Lubricating System employed in a four stroke petrol engine. 7
- (b) Explain with neat sketch Fuel System for a four cylinder diesel engine. 6

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2. (a) Explain by means of neat sketch the construction of a fluid flywheel and clearly state the principle of torque transmission in the same. 7
- (b) What is the functional role of the Clutch in power transmission ? Discuss various factors affecting performance of clutch. rtmnuonline.com 6
3. (a) What is over drive ? Explain it with neat sketch and suitable example. 7
- (b) Why gear box is necessary ? Explain with neat sketch working of 4-speed synchromesh gear box. 6
4. (a) What is the necessity of differential in an Automobile ? Discuss in detail its construction and working. 7
- (b) Classify the brakes and explain the following terms :
 - (i) braking force
 - (ii) weight transfer rtmnuonline.com
 - (iii) brake dip
 - (iv) Stopping distance and time
 - (v) Brake efficiency. 6
5. Write short notes on (any **THREE**) :
 - (a) Pressure cap in cooling system. rtmnuonline.com
 - (b) Bleeding of hydraulic brakes.

- (c) Transfer gear box
- (d) Water pumps rtmnuonline.com
- (e) Disc brakes. 14

SECTION—B

6. (a) Describe the following with neat sketches :
- (i) Tubeless tyres
 - (ii) Radial plies tyres and
 - (iii) Bias plies tyres. 6
- (b) Explain with neat sketch fully floating and semi-floating rear axle and compare its merits and demerits. 7
7. (a) What do you mean by the terms :
- (i) Under steering
 - (ii) Over steering rtmnuonline.com
 - (iii) Neutral steering
 - (iv) Power steering ? 6
- (b) Explain the terms :
- (i) Wheel alignment
 - (ii) Wheel balancing
 - (iii) Overhauling
 - (iv) Engine tune-up. 7
8. (a) Explain in detail : rtmnuonline.com
- (i) Active suspension
 - (ii) Intelligent lighting. 6

- (b) Explain the working of Telescopic Shock absorber with neat sketch. rtmnuonline.com 7

9. (a) What is ignition timing and how it is Set ?
What is the effect of too early ignition on the working of an engine ? 6
- (b) What are the different sources from which electrical energy is drawn in an automobile ? Explain any one of them. 7
10. Write short notes on (any **THREE**) :—
- (a) Articulated Vehicles
 - (b) Horn Circuit
 - (c) Collision Avoidance rtmnuonline.com
 - (d) Front independent Suspension System
 - (e) Automobile Air-conditioning. 14

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