

NTK/KW/15/7557

**Faculty of Engineering & Technology
Seventh Semester B.E. (Mech. Engg.) (C.B.S.)**

Examination

ELECTIVE—I : AUTOMOBILE ENGINEERING

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Solve Question No. **1** **OR** Question No. **2**.
- (3) Solve Question No. **3** **OR** Question No. **4**.
- (4) Solve Question No. **5** **OR** Question No. **6**.
- (5) Solve Question No. **7** **OR** Question No. **8**.
- (6) Solve Question No. **9** **OR** Question No. **10**.
- (7) Solve Question No. **11** **OR** Question No. **12**.
- (8) Due credit will be given to neatness and adequate dimensions.
- (9) Illustrate your answers wherever necessary with the help of neat sketches.

- (b) Explain the construction and working of hydraulic power steering. 7
9. (a) Explain with neat sketch construction and working of Lead Acid Battery. 7
- (b) Enlists the components of automobile electrical system. What are the functions of starter motor, parking light and distributor in automobile. 6

OR

10. (a) What is tyre inflation and aspect ratio what are the effects of tyre inflation and aspect ratio on tyre performance and tyre life. 7
- (b) Explain with neat sketch, construction and working of automobile air conditioning system. Also comment on its need. 6
11. (a) Explain navigational aid and intelligent vehicle highway system. 7
- (b) Explain with neat sketch ABS (Antilock Braking System). 6

OR

12. (a) Explain intelligent parking system in automobile, with the help of sketch. 7
- (b) Explain in detail how engine is tuned. 6

1. (a) Enlist the components of SI engine. Brief out the details of them with suitable sketches. 7
- (b) Explain with neat sketch in detail pressure feed wet sump lubrication system. Give its advantages over dry sump lubrication. 7

OR

2. (a) What are the requirements for fuel supply system ? Sketch and explain fuel supply system for petrol engine. 7
- (b) Explain with neat sketch construction and working of fuel injector. 7
3. (a) Explain with neat sketch construction and working of centrifugal clutch. Why are such clutches used in mopeds, comment on it ? 7
- (b) Explain in detail, Semi-automatic and Automatic transmission system with help of line diagram also draw its advantages and disadvantages over manual/ conventional transmission system. 6

OR

4. (a) Classify gear boxes used in automobile transmission system. Explain in detail, sliding mesh Gear Box. 7
- (b) What are the functions of transfer Gear Box in four wheeler ? Explain with neat sketch construction and working of Transfer Gear Box. 6

5. (a) Explain with neat sketch construction and working of constant velocity joint. Also draw its advantages and limitations of CV joint. 7
- (b) Explain the construction and working of double leading shoe drum brake. What are the benefits of double lead shoe. 6

OR

6. (a) What are the functions performed by differential in automobile ? Explain construction and working of differential with neat sketch. 7
- (b) Explain in detail, construction and working of Hydraulic braking system. Also draw its limitations. 6
7. (a) Define :
 - (i) Camber,
 - (ii) Caster
 - (iii) King pin Inclination.

What are the effects of above on vehicle performance ? 7

- (b) Classify the steering gear boxes. Explain the construction and working of worm and sector gear box. 7

OR

8. (a) Classify suspension system. Explain with neat sketch construction and working of McPherson's strut suspension. 7