

17526

11718

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any THREE :

12

- (a) State the necessity of transmission system in automobile.
- (b) State the various requirements of automobile body.
- (c) Define the following and state general range of angles used :
 - (i) Castor, (ii) Camber.
- (d) State the classification of brakes and braking systems.

(B) Attempt any ONE :

6

- (a) Sketch and explain chassis layout of front engine rear wheel drive.
- (b) (i) State the functions of clutch. 2
- (ii) Explain with neat sketch, the working of Diaphragm type clutch. 4

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- 2. Attempt any FOUR :** **16**
- (a) State the various types of automobile bodies.
 - (b) Explain with neat sketch, Hotchkiss drive.
 - (c) (i) State the function of slip joint provided on propeller shaft. **2**
 - (ii) State the necessity of universal joints used in propeller shaft. **2**
 - (d) Explain with neat sketch working of constant mesh gear box.
 - (e) Compare hydraulic braking system and pneumatic braking system. (any four points)
- 3. Attempt any TWO :** **16**
- (a) State the need of differential. Explain with neat sketch construction and working of differential.
 - (b) Explain the working of rack and pinion type steering gearbox with neat sketch. Also state its advantages.
 - (c) Describe pneumatic braking system with neat sketch and state its advantages.
- 4. (A) Attempt any THREE :** **12**
- (a) Differentiate between radial and cross ply tyres.
 - (b) State the function of helper spring and shackle in leaf spring.
 - (c) Describe wire harness. State any four colour codes used in wiring system of automobiles.
 - (d) Explain battery ignition system with neat sketch.

- (B) Attempt any ONE of the following :** **6**
- (a) Draw a layout of an air-conditioning system of a car and explain its working.
 - (b) (i) State the important precautions to be taken while using air-conditioning system of a vehicle. (any four)
 - (ii) Modern car uses R134a refrigerant instead of R-12. State reasons thereof.
- 5. Attempt any FOUR :** **16**
- (a) Explain the importance of aerodynamic shape of a car body.
 - (b) Explain with neat sketch, working of telescopic shock absorber.
 - (c) Explain with neat sketch, Bendix drive used in starting system.
 - (d) State the necessity of wheel alignment and wheel balancing.
 - (e) Name any four major components of automobile and state their function.
- 6. Attempt any TWO :** **16**
- (a) Describe construction of MacPherson suspension system. State its advantages.
 - (b) Describe with neat sketch construction and working of lead acid battery.
 - (c) Explain construction and working of alternator with neat sketch.
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