

17526

11920

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any THREE of the following :

12

- (a) State the necessity of transmission system in automobile.
- (b) Classify automobiles on the basis of any four criteria with example of each.
- (c) Define the following terms with the help of simple sketch :
 - (i) Camber
 - (ii) King pin inclination
- (d) Draw neat labelled layout of air brake system.

- (B) Attempt any ONE of the following :** **6**
- (a) Enlist various types of vehicle layout and explain with neat sketch front engine rear wheel drive layout.
 - (b) Explain with neat sketch construction and working of overdrive.
- 2. Attempt any FOUR of the following :** **16**
- (a) Explain with sketch working of four stroke petrol engine power plant.
 - (b) Explain with neat sketch working of constant mesh gear box.
 - (c) Differentiate between disc brake and drum brake.
 - (d) Explain with neat sketch working of differential.
 - (e) State the different types of rear axle. Explain construction details of any one of them with sketch.
- 3. Attempt any TWO of the following :** **16**
- (a) State the functions of clutch. Explain with neat sketch working of single plate clutch (diaphragm type).
 - (b) Explain with neat sketch hydraulic braking system. Also, state any two advantages and two disadvantages of hydraulic brake system.
 - (c) Explain with neat sketch construction and working of rack and pinion steering gear box.

4. (A) Attempt any **THREE** of the following :

12

- (a) Define wheel alignment and wheel balancing.
- (b) Explain Mac-Pherson type suspension system with neat sketch.
- (c) Explain wire harness and state any four color codes used in wiring system.
- (d) Explain working of battery ignition system with neat sketch.

(B) Attempt any **ONE** of the following :

6

- (a) Sketch the layout of an air-conditioning system for a car and explain its working.
- (b) State and explain air-conditioning parameters for human comfort.

5. Attempt any **FOUR** of the following :

16

- (a) Describe with neat sketch working of alternator.
- (b) Explain with neat sketch spoked wheel.
- (c) Differentiate between radial ply and cross ply tyres.
- (d) Explain the importance of an aerodynamic shape of car body.
- (e) Draw the general layout of an automobile Chassis and label the components.

P.T.O.

6. Attempt any TWO of the following :

16

- (a) Explain with neat sketch construction and working of starting motor.
 - (b) Sketch a cut section showing construction of battery. Label the components and state their functions.
 - (c) Explain with neat sketch construction and working of telescopic shock absorber.
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