

17526

21718

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) Give the classification of automobiles.
- (b) What is the function of universal joint and sliding joint in propeller shaft ?
- (c) Define the following terms with the help of simple sketch :
 - (i) Caster
 - (ii) King pin inclination
- (d) What are the major components mounted on vehicle chassis ? State the purpose of each component.

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

6

- (a) Draw the layout of four wheel drive vehicle. State the advantages and disadvantages.
- (b) Draw neat sketch of full-floating axle and explain its features.

2. Attempt any FOUR of the following : **16**

- (a) Differentiate between drum braking system and disc braking system.
- (b) Describe with neat sketch hotch-kiss drive.
- (c) How air suspension system works ? Draw the layout.
- (d) Explain the working of electronic ignition system.
- (e) Draw neat sketch of leaf spring. State its function.

3. Attempt any TWO of the following : **16**

- (a) Explain the necessity and working of single plate clutch with neat sketch.
- (b) Draw the layout of air-braking system. Explain its working.
- (c) Explain the construction and working of lead-acid battery with neat sketch.

4. (A) Attempt any THREE of the following : **12**

- (a) Describe tubeless tyre with neat sketch.
- (b) State the procedure of wheel balancing.
- (c) Write different colour codes used in automobile wiring system.
- (d) Explain the working of bendix drive with neat sketch.

(B) Attempt any ONE of the following : **6**

- (a) Explain working of Rack and pinion type steering gear system.
- (b) State and explain air-conditioning parameters for human comfort.

5. Attempt any FOUR of the following :**16**

- (a) Explain the types of Wheel Rims.
- (b) Why differential is needed ? Draw neat sketch of differential.
- (c) Explain the working of epicyclic gear box with neat sketch.
- (d) Explain the importance of aerodynamic shape of car body.
- (e) State the advantages of LPG and CNG operated vehicles.

6. Attempt any TWO of the following :**16**

- (a) Explain the working of telescopic shock absorber with neat sketch.
 - (b) State the need of charging system. Explain construction and operation of charging system used in automobiles.
 - (c) Explain the working of car air-conditioning system with neat layout.
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