

17526

16172

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**
- (i) Write any four advantages of front engine rear wheel drive.
 - (ii) Explain different types of automobile chassis.
 - (iii) State the advantages of LPG and CNG operated engines.
 - (iv) Draw general layout of front engine front wheel drive car.
- (B) Attempt any **ONE** of the following : **6**
- (i) State and explain different forces acting on the vehicle body related to aerodynamics.
 - (ii) Explain with neat sketch working of constant mesh gear box.

2. Attempt any FOUR of the following : 16

- (i) Describe with neat sketch single plate clutch.
- (ii) State function of universal and slip joint used in propeller shaft.
- (iii) Why differential is used in automobile ? Explain working of differential.
- (iv) State different types of real axle. Explain working of any one.
- (v) What are the requirements of steering system ?

3. Attempt any TWO of the following : 16

- (i) With neat sketch write construction and working of rack and pinion type steering system.
- (ii) Explain construction and working of two wheeler gear box.
- (iii) Give any four probable causes of tyre wear and give its remedies.

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

- (i) Define and give range of angles –
 - (1) Castor
 - (2) Camber
- (ii) Explain need of suspension system in automobiles.
- (iii) Compare tubed tyres with tubeless tyres.
- (iv) Describe with neat sketch the effect of –
 - (1) under inflation
 - (2) over inflation on tyre

- (B) Attempt any ONE of the following :** **6**
- (i) What are the components of hydraulic braking system ? Explain construction and working of master cylinder.
 - (ii) Differentiate between drum brakes and disc brakes.
- 5. Attempt any FOUR of the following :** **16**
- (i) Describe construction of Macpherson suspension system with neat sketch.
 - (ii) Explain function of Bendix drive in starter system.
 - (iii) State advantages of CDI ignition system.
 - (iv) Write different colour codes used in an automobile wiring system.
 - (v) State and explain air conditioning parameters for human comfort.
- 6. Attempt any TWO of the following :** **16**
- (i) State the function of battery in an automobile. List the main components of lead acid battery. Explain its construction with neat sketch.
 - (ii) Explain typical wiring diagram of four wheeler automobile with neat sketch.
 - (iii) Write any eight important precautions to be taken while using AC system in automobiles.
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