



17526

16117

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) *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) Write functions of universal joint and slip joint.
 - b) Draw a neat sketch of front engine front wheel type vehicle layout and label it.
 - c) Define and give range of angles.
 - i) Castor
 - ii) Camber
 - d) State necessity of braking system. What is function of parking brakes ?
- B) Attempt **any one** of the following : **6**
- a) Explain working of petrol engine power plant with neat sketch.
 - b) Describe the working of overdrive with neat sketch.
2. Attempt **any four** of the following : **16**
- a) State the advantages of LPG and CNG operated engines.
 - b) Draw a neat labeled sketch of single plate clutch.
 - c) Describe with sketch working of recirculating ball type steering gear box.
 - d) Describe with neat sketch working of Rear Axle used in Truck.
 - e) Describe with neat sketch Hotch Kiss drive.
3. Attempt **any two** of the following : **16**
- a) State the need of differential. Explain with neat sketch working of differential.
 - b) Differentiate between Drum and Disc brake (any eight point).
 - c) Describe working of power steering with sketch.

P.T.O.



4. A) Attempt **any three** of the following : 12
- a) Explain any four factor affecting tyre life.
 - b) What is the requirement of suspension system in Automobile ?
 - c) Sketch and explain the working of Bendix drive.
 - d) Draw a layout of lighting system of four wheeler.
- B) Attempt **any one** of the following : 6
- a) Explain working of car air-conditioning system with layout.
 - b) i) State precautions to be taken while using air conditioning system of a vehicle (eight point) 4
 - ii) Why modern car uses R 13 4a refrigerants instead of R-12. 2
5. Attempt **any four** of the following : 16
- a) Write different type of wire colour codes used in automobile wiring.
 - b) Describe disc wheel with neat sketch.
 - c) Describe telescopic shock absorber with sketch.
 - d) Why aerodynamic shapes is important in automobile bodies ? State its advantages.
 - e) How Automobiles are classified ?
6. Attempt **any two** of the following : 16
- a) State the need of charging system. Describe construction and operation of charging system used in Automobile.
 - b) Explain with neat sketch electronic ignition system.
 - c) Describe construction of Wishbone type suspension system. State its advantages.
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