

22309

21819

3 Hours / 70 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.

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| 1. Attempt any FIVE of the following : | 10 |
| (a) State two advantages of FERWD vehicle. | |
| (b) State any two functions of frame of vehicle. | |
| (c) List the clutch lining materials. | |
| (d) List the major components of automotive gear box. | |
| (e) State functions and construction of slip joint. | |
| (f) State functions of differential. | |
| (g) State the effects of incorrect tyre inflation. | |
| 2. Attempt any THREE of the following : | 12 |
| (a) Sketch a layout of four wheel drive vehicle and label the major parts. | |
| (b) Classify friction and non-friction type automotive clutches. | |
| (c) Describe working of Torque convertor with sketch. | |
| (d) Draw neat labelled sketch of Hotchkiss drive. | |
| 3. Attempt any THREE of the following : | 12 |
| (a) Classify the vehicle layout with respect to | |
| (i) Arrangement of engine | |
| (ii) Application. | |

- (b) Differentiate between 2 WD and 4 WD on the basis of the following parameters :
- (i) Torque & Power transmission
 - (ii) Engine location & drive
 - (iii) Performance & efficiency
 - (iv) Merits
- (c) Describe with sketch working of single plate dry clutch.
- (d) Describe with sketch working of gear selector mechanism mounted on the top of gear box.
- 4. Attempt any THREE of the following : 12**
- (a) Describe with sketch working of hydraulic type clutch operating mechanism.
 - (b) In motorcycle which type of clutch is used and draw neat labelled sketch.
 - (c) Compare dry type plate clutch with wet type plate clutch on the basis of
 - (i) Construction
 - (ii) Torque transmission
 - (iii) Size
 - (iv) Applications
 - (d) Differentiate between sliding mesh and constant mesh gear box.
 - (e) In modern automobiles synchromesh gear box is preferred over constant mesh gear box. Justify its application with suitable illustrations.
- 5. Attempt any TWO of the following : 12**
- (a) Draw neat labelled sketch of synchromesh gear box.
 - (b) Compare Hotchkiss drive and Torque tube drive.
 - (c) Enlist types of rods acting on rear axle and explain any two in details.
- 6. Attempt any TWO of the following : 12**
- (a) Describe with diagram the construction and working of double reduction axle.
 - (b) Give tyre designation with one example and interpret the meaning of terms involved in it.
 - (c) Compare with sketches Tube tyre with Tubeless tyre on the basis of specifications, construction and performance.
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