

22309

23124

3 Hours / 70 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.

Marks

1. Attempt any FIVE :

5 × 2 = 10

- (a) State any two requirements of frame.
- (b) List the types of vehicles on the basis of body styles. (any four)
- (c) State the function of clutch.
- (d) State the requirement of Gear box.
- (e) State the function of slip joint.
- (f) List the different types of loads acting on rear axle.
- (g) State any two effects of incorrect tyre inflation.

2. Attempt any THREE :

3 × 4 = 12

- (a) Describe the working of single plate dry clutch with neat sketch.
- (b) Describe the working of sliding mesh gear box with neat sketch.
- (c) Classify vehicle layout on the basis of :
 - (i) Location of engine
 - (ii) No. of live axles
 - (iii) Arrangement of engine, passenger & luggage section
 - (iv) Application
- (d) Describe the construction of propeller shaft.



- 3. Attempt any THREE :** **3 × 4 = 12**
- (a) Draw a neat sketch of front engine rear wheel drive type vehicle layout. State its applications.
 - (b) Distinguish clearly between conventional frame and unitary frame.
 - (c) Describe the working of fluid coupling with neat sketch.
 - (d) Describe the construction of semi-automatic transmission system.
- 4. Attempt any THREE :** **3 × 4 = 12**
- (a) Describe the working of centrifugal clutch with neat sketch.
 - (b) Compare dry clutch & wet clutch on the basis of :
 - (i) Heat Dissipation
 - (ii) Life
 - (iii) Torque transmission
 - (iv) Coefficient of friction
 - (c) Suggest clutch friction materials used in dry and wet clutch. Give any one real life example.
 - (d) “Automatic Transmissions are better option than manual transmission.” Justify the statement with suitable reasons.
 - (e) Illustrate the working of transfer case with neat sketch.
- 5. Attempt any TWO :** **2 × 6 = 12**
- (a) Describe the working of variator drive used in mopeds with neat sketch.
 - (b) Describe the working of torque-tube drive. Also state its two advantages over Hotchkiss drive.
 - (c) “Differentials is necessary component of four wheeler automobiles.” Justify the statement with suitable reasons.
- 6. Attempt any TWO :** **2 × 6 = 12**
- (a) State the types of Rear Axles. Describe the working of semi-floating axle.
 - (b) State the function of wheel. Describe the construction of wire spoke wheel.
 - (c) Compare radial ply tyre and cross ply tyre.
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