

17307

11920

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 SIX :

6 × 2 = 12

- (a) What is meant by vehicle lay-out ? Give any two examples of lay-out.
- (b) State materials for clutch linings.
- (c) State the loads acting on chassis-frame.
- (d) List any four components of gear-box.
- (e) Give applications of universal joint and slip joint.
- (f) State hollow propeller shaft used in four wheelers.
- (g) List the components of differential unit.
- (h) State location of clutch in an automobile.

(B) Attempt any TWO :

2 × 4 = 8

- (a) Draw neat labelled lay-out of four wheel drive.
- (b) What is fluid-coupling ? State it's working principle.
- (c) Draw labelled clutch used in heavy vehicle.

2. Attempt any FOUR :**4 × 4 = 16**

- (a) What is variator drive ? State any two applications in which variator drive is used.
- (b) Explain hydraulic operated clutch mechanism with neat sketch.
- (c) Describe lubrication of gear-box.
- (d) Compare Dry and Wet clutch. (any four points)
- (e) Draw neat labelled sliding mesh gear box in first gear engaged position.
- (f) Explain working of multiple clutch with neat sketch.

3. Attempt any FOUR :**4 × 4 = 16**

- (a) Describe synchronise unit with neat sketch.
- (b) Compare sliding mesh and constant mesh gear box. (any four points)
- (c) Draw labelled gear selector mechanism with gear lever on top of the gear box.
- (d) Explain double de-clutching.
- (e) Explain with neat sketch, construction and working of torque converter.
- (f) Explain construction and working of transfer case with neat sketch.

4. Attempt any FOUR :**4 × 4 = 16**

- (a) Describe with neat sketch construction and working of propeller shaft.
- (b) Explain specification of Tyre with suitable example.
- (c) Explain with neat sketch semi-floating rear axle.
- (d) Explain construction of differential with neat sketch.
- (e) Explain Tyre inflation and its effect.
- (f) State the functions of wheels and enlist types of wheels.

5. Attempt any TWO :**2 × 8 = 16**

- (a) Enlist different types of rear axle casing and explain construction of any one with neat sketch.
- (b) Differentiate between torque tube and Hotchkiss drive.
- (c) Explain constant velocity joints with neat sketch.

6. Attempt any TWO :**2 × 8 = 16**

- (a)
 - (i) Compare tubed tyre with tubeless tyre. (any four points)
 - (ii) Draw tyre rotation pattern for heavy vehicle.
 - (b)
 - (i) Draw any four sections of chassis frames with their merits.
 - (ii) Draw a neat labelled lay-out of rear engine - rear wheel driven vehicle.
 - (c) Explain with neat sketch for
 - (i) Three quarter floating rear axle
 - (ii) Full floating rear axle
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