

22559

23242

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.

Marks

- 1. Attempt any FIVE of the following: 10**
- List the types of two wheeler frame.
 - State the frame materials used in two wheelers.
 - State the purpose of lubrication system.
 - List the types of muffler.
 - State the types of drives used in two wheeler transmission system.
 - Define the term caster angle.
 - State the benefits of twin sparks ignition system.
- 2. Attempt any THREE of the following: 12**
- Explain monocoque construction of two wheeler chassis.
 - Explain construction and working of washable oiled sponge element type air cleaner.
 - State advantages of gas filled shock absorber used at rear wheel.
 - Differentiate between drum brake and disc brake.

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- 3. Attempt any THREE of the following:** **12**
- a) Describe engine valve operating mechanisms.
 - b) Explain the working of microprocessor controlled ignition system.
 - c) State the purpose of
 - i) Turn signal lamp
 - ii) Trip meter
 - iii) Head lamp
 - iv) Side stand indicator lamp
 - d) Draw a circuit diagram of two wheeler charging system.
- 4. Attempt any THREE of the following:** **12**
- a) Explain the effect of following on aerodynamics of motorcycle.
 - i) Shape of head lamp
 - ii) Tail lamp arrangement
 - b) Explain the effect of following on aesthetics of motorcycle.
 - i) Ground clearance
 - ii) Shape and position of mudguard
 - c) Explain safety aspects of various drive gear used with two wheeler.
 - d) Explain the importance of ergonomic aspect of seat arrangement for rider and pillion rider.
 - e) State good driving habits to avoid accidents.

5. Attempt any TWO of the following:**12**

- a) Describe construction of following two wheeler frame.
 - i) Engine as a stressed member
 - ii) Twin spar frame
- b) Explain the working of carburetor under following operating conditions.
 - i) Idling
 - ii) Starting
 - iii) Acceleration
 - iv) Normal running
- c) Explain working of positive crank case ventilation with help of neat sketch.

6. Attempt any TWO of the following:**12**

- a) Draw neat sketch indicating various components of two wheeler steering geometry. Explain effect of trail.
 - b) Describe the criteria for selection of wheels and tyres for motorcycle and scooter.
 - c) Explain working of button start system with help of neat sketch.
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