

17521

11819

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) Use of Non-programmable Electronic Pocket Calculator is permissible.

Marks

1. a) **Attempt any THREE of the following:** **12**
- (i) Explain the working of constant mesh gear box with neat sketch.
 - (ii) State specific objectives of frames and bodies. (Any two)
 - (iii) Compare two stroke engine and four stroke engine.
 - (iv) Write down advantage of electronic fuel injection system.
- b) **Attempt any ONE of the following:** **6**
- (i) Explain the working of damper and double acting type of shock absorbers.
 - (ii) State the purpose of providing -
 - 1) Crash bar
 - 2) Saree guard
 - 3) Mudguard

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) What is gear ratio? Explain gear ratio in motor cycle.
 - b) Draw a neat sketch of centrifugal clutch and explain working in brief.
 - c) Explain the function of carburetor under various operating conditions like -
 - (i) Idling
 - (ii) Starting
 - (iii) Accelerating
 - (iv) Normal running
 - d) Draw a neat sketch of catalytic convertor and explain working in brief.
 - e) Explain wet sump pressurised lubrication in four stroke engine with neat labelled sketch.
- 3. Attempt any FOUR of the following:** **16**
- a) Explain vacuum operated system.
 - b) Draw a block diagram of Exhaust Gas Recirculation (EGR).
 - c) List the types of air filter and explain anyone.
 - d) Explain petrol lubrication with separate oil pump for two stroke engines.
 - e) Explain overhead valve arrangement with neat labelled sketch.
 - f) Explain the ergonomic effects of -
 - (i) Seat arrangement for rider and pillion rider.
 - (ii) Handle bar arrangement.
- 4. a) Attempt any THREE of the following:** **12**
- (i) Write a advantages of multiple valves in four stroke.
 - (ii) Explain the function of muffler and write down their types.
 - (iii) Draw a schematic circuit of charging system.
 - (iv) Explain the working of CDI system.

- b) **Attempt any ONE of the following:** **6**
- (i) Draw a block diagram and explain the working of microprocessor controlled ignition system.
 - (ii) Write down advantages (Any three)
 - 1) Mano-shock suspension system
 - 2) Gas filled shock absorber for rear and suspension.
5. **Attempt any FOUR of the following:** **16**
- a) Write down criteria for selection of wheels and tyres for scooters.
 - b) Explain the working of hydraulic brakes with neat sketch.
 - c) What is important role of battery in two wheelers.
 - d) Draw a neat sketch of speedometer and explain the working in brief.
 - e) Explain the purpose of using LED light in tail lamp.
 - f) State the importance of -
 - (i) Driving habit
 - (ii) Helmet
6. **Attempt any FOUR of the following:** **16**
- a) Draw a neat sketch of expanding shoe types brakes.
 - b) Explain the terms of belt-drive with variator mechanism.
 - c) State the importance of -
 - (i) Jacket
 - (ii) Day night goggle
 - d) Explain the aerodynamic aspects of -
 - (i) Head lamp shape
 - (ii) Shape of fuel tank
 - e) Differentiate between drum brake and disc brake (any four points)
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