



17521

14115

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**.

MARKS

1. A) Attempt **any three** of the following : **12**
- a) State four major components of transmission system of motorcycle and write function of each.
 - b) Draw schematic diagram of two-stroke engine (petrol) and label the parts.
 - c) Draw overhead valve arrangement and list its two advantages.
 - d) Compare petroil lubrication system with pressurized lubrication system.
- B) Attempt **any one** of following : **6**
- a) Draw a block diagram of 'EGR' and describe its working.
 - b) Describe the working of CDI system with the help of schematic diagram.
2. Attempt **any four** of the following : **16**
- a) Which type of clutch is commonly used in motor cycles ? Justify your answer with suitable example.
 - b) Describe the working of carburetor under following operating conditions :
 - i) Idling
 - ii) Starting
 - iii) Acceleration
 - iv) Normal running
 - c) State advantages of gas filled shock absorber used at rear end.

P.T.O.



- d) State the criteria for selection of wheels and tyres for motorcycle and scooter.
- e) Describe the use of Jacket and Helmet as a safety concern.

3. Attempt **any four** of the following :

16

- a) Describe construction and working of vario-drive used in mopeds.
- b) State types of muffler. With neat sketch explain working of any one type.
- c) Sketch and describe handle bar arrangement.
- d) Describe the working of double acting type shock absorber.
- e) Compare drum brake with disc brake (four points).
- f) Explain the effect of following on aesthetics of motorcycle :
 - i) Ground clearance
 - ii) Shape and position of mudguard.

4. A) Attempt **any three** of the following :

12

- a) Draw a layout of mechanical brake and describe its working.
- b) What is 'DTSi' System ? State its two benefits.
- c) State the purpose of :
 - i) High beam indicator lamp
 - ii) Turn signal lamp
 - iii) Speedometer lamp
 - iv) Trip meter.
- d) State merits and demerits of kick start and button start systems.

B) Attempt **any one** of the following :

6

- a) Draw a neat sketch of catalytic converter and describe its construction and working.
- b) Draw a circuit diagram of two wheeler charging system showing AC and DC circuits and label it.



5. Attempt **any four** of the following :

- a) Compare two wheeler gear box with four wheeler gear box. (four points)
- b) Describe construction and working of Air cleaner.
- c) Describe working of microprocessor controlled ignition system.
- d) Describe effect of following on aerodynamics of motorcycle :
 - i) Shape of head lamp
 - ii) Shape of fuel tank.
- e) Explain ergonomic effects of
 - i) Handle bar position
 - ii) Raised seat at rear end.

6. Attempt **any four** of the following :

16

- a) Describe the use of
 - i) Horn
 - ii) Reflectors in head lamp and tail lamp.
- b) Describe with sketch wet sump pressurized lubrication system in four stroke.
- c) State the conditions when kick start and button start methods are used. Justify your answer.
- d) State the purpose of providing
 - i) Crash bar
 - ii) Saree guard
 - iii) Mudguard
 - iv) Sealed beam-head lamp.
- e) State four good driving habits to avoid accidents.



f) Identify the system shown in Figure 1. Redraw and label the components shown by numbers.

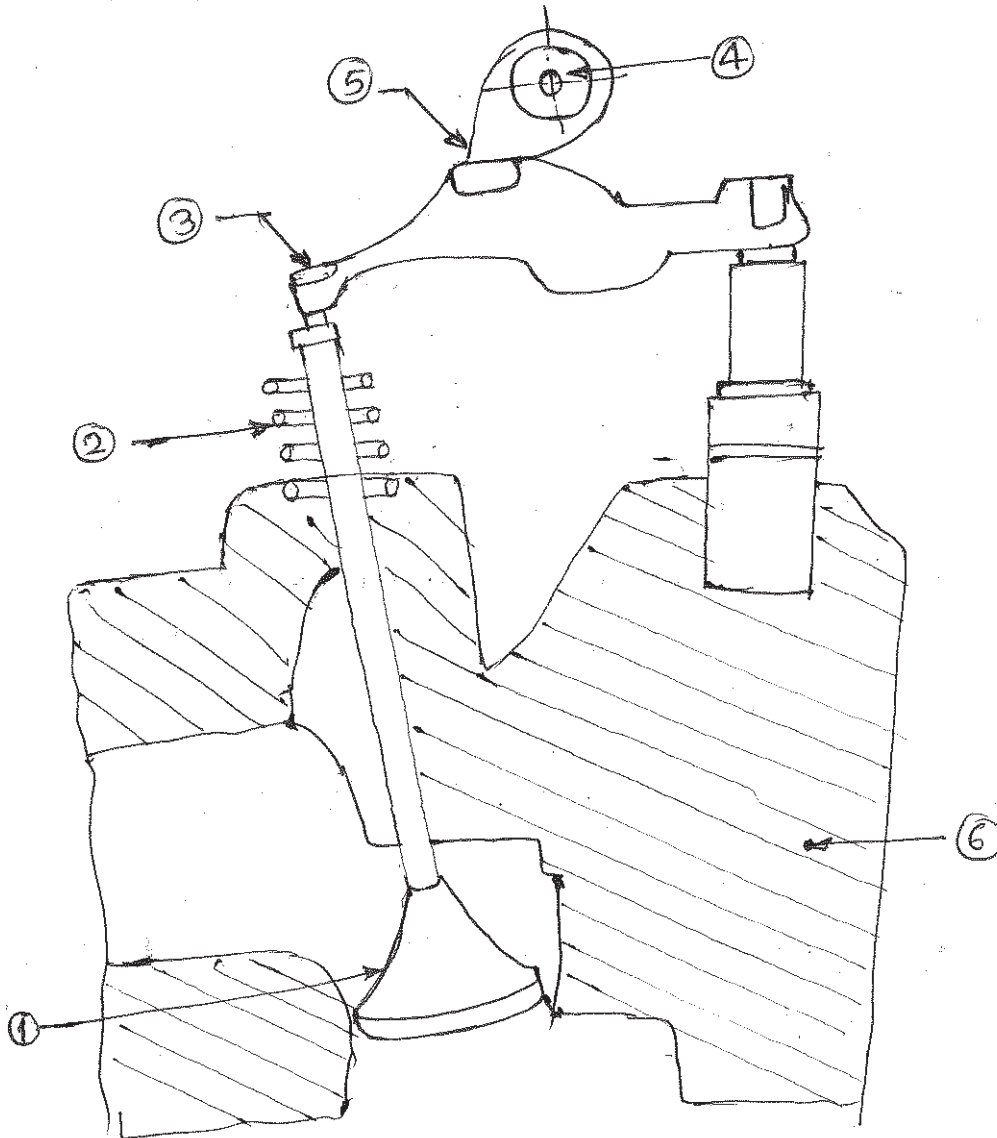


Figure 1

