

17521

16117

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 |
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| 1. (A) Attempt any THREE of the following : | 12 |
| (a) Describe the ergonomic aspect for
(i) Motorcycle Handle bar
(ii) Driver's seat (Motorcycle) | |
| (b) Describe purpose of providing caster angle. | |
| (c) Explain construction and working of expanding shoe type brakes. | |
| (d) Describe purpose of lubrication system. | |
| (B) Attempt any ONE : | 6 |
| (a) Explain construction and working of constant mesh gear box with neat sketch. | |
| (b) Differentiate between two stroke engine & four stroke engine. (any six points) | |
| 2. Attempt any FOUR of the following : | 16 |
| (a) State function of clutch. Draw a neat sketch of centrifugal clutch. | |
| (b) Draw a neat sketch of catalytic convertor and state any four advantages of catalytic convertor. | |

- (c) Explain working of double acting types of shock absorbers with neat sketch.
- (d) Differentiate between hydraulic and mechanical brakes.
- (e) State the use of
 - (i) Speedometer
 - (ii) Tripmeter
- (f) Illustrate the use of helmet for safety concern.

3. Attempt any FOUR of the following : 16

- (a) List out any four types of frame.
- (b) Draw a block diagram and working of positive crank case ventilation.
- (c) Write down any four advantages of mono-shock suspension system.
- (d) Explain criteria for selection of wheels and tyres.
- (e) Describe the working of Condenser Discharge Ignition (CDI) system.
- (f) How shape of fuel tank affects on two wheeler performance ?

4. (A) Attempt any THREE of the following : 12

- (a) State the benefits of Twin Spark ignition system.
- (b) Why a decompression valve is used in some engine ? Draw a schematic diagram for the same.
- (c) Explain the terms of belt drive with variator mechanism.
- (d) State the purpose of providing.
 - (i) Crash bar
 - (ii) Saree guard
 - (iii) Mud guard
 - (iv) Sealed beam head lamp

(B) Attempt any ONE of the following : 6

- (a) State the function of carburetor. Explain working of any one in details with neat sketch.
- (b) Explain working of charging system with it's schematic diagram.

5. Attempt any FOUR of the following : 16

- (a) State advantages of electronic fuel injection system. (any four)
- (b) Describe the function of :
 - (i) Horn
 - (ii) Reflection in head lamp & tail lamp
- (c) Describe the ergonomic aspects for floor/foot rest for driver and pillion rider.
- (d) Explain wet sump pressurized lubrication in four stroke engine.
- (e) State the importance of
 - (i) Side panels for scooter and motorcycle.
 - (ii) Mud-guard shape for motorcycle
- (f) List out components of starting system and their function.

6. Attempt any FOUR of the following : 16

- (a) Describe layout of gravity feed type of fuel supply system.
 - (b) State the purpose of using following :
 - (i) LED light in tail lamp
 - (ii) Neutral indicator lamp
 - (iii) High Beam indicator lamp
 - (iv) Speed meter lamp
 - (c) Explain the effect of following aesthetics aspects of motorcycle
 - (i) Ground clearance
 - (ii) Head lamp fairing of motorcycle.
 - (d) Describe the uses of jacket & day night goggles as safety concern.
 - (e) Describe operation of microprocessor controlled ignition system with block diagram.
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