

Scheme – I
Sample Question Paper

Program Name : Diploma in Automobile Engineering
Program Code : AE
Semester : Fifth
Course Title : Two and Three Wheeler Technologies
Marks : 70

22559

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following.

10 Marks

- a) State two types of two wheeler frame.
- b) Sketch layout of motorcycle chassis.
- c) Describe construction of air cleaner used in motorcycle.
- d) State the purpose of catalytic convertor
- e) Describe the purpose of neutral position of gear shifter between 1st and 2nd gear position.
- f) Define term caster angle
- g) State two applications of trip meter.

Q.2) Attempt any THREE of the following.

12 Marks

- a) State the purpose of using tubular frame and twin spar frame.
- b) Explain working of lubrication system of Rickshaw four-stroke engine with sketch
- c) Compare transmission system of scooter and motorcycle on the basis of gear ratio, primary drive, gear shift mechanism and final drive
- d) Explain use of spoke wheel for motorcycle with justification

Q.3) Attempt any THREE of the following.

12 Marks

- a) Select engine for motorcycle with justification
- b) Describe the procedure to check CDI unit with sketch.

- c) Explain the working of two wheeler charging system with sketch.
- d) Compare kick start and button start arrangement on the basis of effort, battery, convenience and maintenance.

Q.4) Attempt any Three of the following.

12 Marks

- a) List different ergonomic aspects of scooter seat with sketch.
- b) Describe significance of jacket relevant to rider.
- c) Explain significance of aesthetic aspect for side panels of scooter.
- d) Describe aerodynamic aspects of headlamp shape for motorcycle with sketch
- e) State the significance of ground clearance for scooter.

Q.5) Attempt any TWO of the following.

12 Marks

- a) Select frame material for scooter, motorcycle and rickshaw with justification.
- b) Select engine exhaust system muffler for motorcycle with justification.
- c) Sketch the emission control system for four stroke engine crankcase.

Q.6) Attempt any TWO of the following.

12 Marks

- a) Select front suspension system for motorcycle with justification. Sketch relevant system.
- b) Select tyre for scooter, motorcycle and sports bike with justification.
- c) Describe features of two two-wheeler dashboard meters that enable optimum performance.

Scheme – I
Sample Test Paper - I

Program Name : Diploma in Automobile Engineering
Program Code : AE
Semester : Fifth
Course Title : Two and Three Wheeler Technologies
Marks : 20

22559

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

08 Marks

- a. Select frame for scooter with justification.
- b. Sketch carburettor working under idling condition.
- c. State engine selection criteria for two-wheeler
- d. State the purpose of providing exhaust gas recirculation system in rickshaw engine.
- e. Describe handlebar arrangement for motorcycle.
- f. Sketch variator mechanism.

Q.2 Attempt any TWO

12 Marks

- a. Describe double cradle frame with sketch.
- b. Sketch and describe emission control system that reduces harmful tail-pipe emission.
- c. Compare Chain drive and belt drive type of transmission systems on the basis of
 - i. construction.
 - ii efficiency
 - iii service life
 - iv maintenance.

Scheme – I
Sample Test Paper - II

Program Name : Diploma in Automobile Engineering
Program Code : AE
Semester : Fifth
Course Title : Two and Three Wheeler Technologies
Marks : 20

22559

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

08 Marks

- a. Describe the procedure to adjust damper pre-load for rear wheel suspension of motorcycle.
- b. Describe working of auto-rickshaw braking system.
- c. Sketch circuit of Capacitor Discharge Ignition system.
- d. State the use of neutral indicator lamp and high beam indicator lamp at the dashboard.
- e. Explain significance of headlamp fairing of motorcycle with justification.
- f. Describe ergonomic aspect of foot rest for pillion rider.

Q.2 Attempt any TWO.

12 Marks

- a. Sketch gas filled shock absorber and describe its working.
- b. Sketch circuit of Engine button start system and explain its working.
- c. State the significance of the following.
 - i. LED light in tail lamp
 - ii. Driving habits
 - iii. Day night goggle
 - iv. Tachometer at the dashboard