

Scheme-G
Sample Test Paper- I

Course Name :-Diploma in Automobile Engineering

Course Code :-AE

Semester :-Fourth

Subject Title :-Automobile Engines

Marks :-25

17408

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

Q1. Attempt any THREE of the following

(09

Marks)

- a) Differentiate between S.I. engine & C.I. engine.(Min 6 points)
- b) Write any three engine specification of two wheeler.
- c) Draw single and double overhead cam shaft.
- d) Draw a simple sketch of 2 stroke S.I. engine & label all the parts.
- e) State material with justification for Gasket.

Q2. Attempt any TWO of the following

(08

Marks)

- a) Describe manufacturing process for piston with simple sketch.
- b) Explain with figure actual valve timing diagram for S.I. engine
- c) Differentiate between dry liner & wet liner.(minimum 4 points)

Q3. Attempt any TWO of the following

(08

Marks)

- a) Explain layout of distributor type fuel injection pump.
- b) Describe working of common rail fuel injection system.
- c) Explain working of solex carburetor with neat sketch.

Scheme-G

Sample Test Paper- II

Course Name :-Diploma in Automobile Engineering

Course Code :-AE

Semester :-Fourth

Subject Title :-Automobile Engines

Marks :-25

17408

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

Q1. Attempt any THREE of the following

(09

Marks)

- a) Draw the labeled diagram of magneto ignition system
- b) Explain air cooling system and write its limitations
- c) State various properties of lubricating oil
- d) Describe working principle of hydraulic dynamometer

Q2. Attempt any TWO of the following

(08

Marks)

- a) State different types of muffler and explain any one of them.
- b) Explain construction and working of water pump in cooling system
- c) Draw the engine lubrication system and show oil flow.

Q3. Attempt any TWO of the following

(08

Marks)

- a) State different types of radiator and explain construction and working of any one of them.
- b) Explain electrically driven cooling fan circuit.
- c) State various Engine Performance parameters and describe any two of them.

Scheme-G
Sample Question Paper

Course Name :-Diploma in Automobile Engineering

Course Code :-AE

Semester :-Fourth

Subject Title :-Automobile Engines

Marks :-100

17408

Time:-3 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

Q1. (A) Attempt any SIX

(12 Marks)

- a) Define I.C engine
- b) State any two merits of vertical I.C. engine
- c) List any two applications of I.C. engine
- d) State any four specifications of LMV engine
- e) State any two limitations of water cooling system
- f) Define Indicative Power and Brake Power
- g) State function of Cylinder Block and Cylinder Head
- h) State function of Feed Pump

Q1. (B) Attempt any TWO

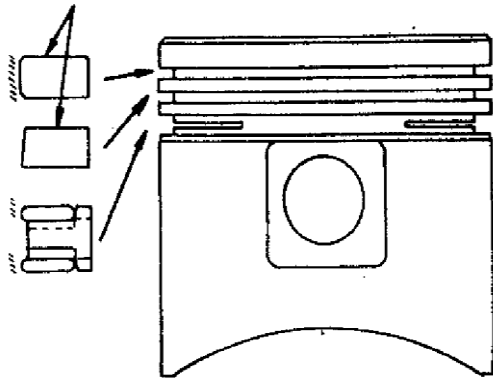
(08 Marks)

- a) Compare 4 stroke S.I. and C.I. Engine (minimum 4 points)
- b) Classify I.C. Engines on the basis of
 - 1) Cycle of Operation
 - 2) Fuel
 - 3) Charging Method
 - 4) Ignition
- c) State the necessity of scavenging and describe any one method of Scavenging.

Q2. Attempt any FOUR

(16 Marks)

- a) Give engine nomenclature
- b) Identify and redraw the component shown below, label it and specify suitable material for manufacturing it.



- c) State the application and advantages of dry and wet liners.
- d) Name manufacturing method for following
 1. Connecting rod
 2. Cam shaft
 3. Piston
 4. Gasket
- e) Compare actual and theoretical valve timing diagrams for 4 Stroke S.I. engine
- f) Distinguish between crankshaft and camshaft

Q3. Attempt any FOUR

(16 Marks)

- a) Explain Various Engine Cam shaft and Valve arrangement.
- b) Explain Construction and working of simple carburetor
- c) State different types of fuel injection systems and explain any one of them
- d) Explain working principle of mechanical governor in F.I.P.
- e) State different types of air cleaners and explain any one of them
- f) Compare petrol and Diesel fuel supply systems.(minimum 4 points)

Q4. Attempt any FOUR

(16 Marks)

- a) Explain working of battery ignition system

- b) State the function of exhaust systems and list its parts.
- c) State the need of firing order in multi- Cylinder Engine and write firing order for typical 3, 4 and 6 cylinder Engine.
- d) State different properties of coolant.
- e) State need of cooling system and compare various cooling systems.
- f) Describe construction and working of thermostat valve.

Q5. Attempt any FOUR

(16 Marks)

- a) Draw a neat sketch of lubrication system for multi cylinder engine and describe its working.
- b) State need and describe working of Positive crank case ventilation (P.C.V.)
- c) Classify lubricating oils and name the oils used in modern engine.
- d) State various components of lubricating system and state their function.
- e) State various Engine Performance parameters and describe any two and them.
- f) State various dynamometers for Engine testing and explain any one

Q6. Attempt any TWO

(16 Marks)

- a) Explain Morse Test and Williams Line method for frictional power.
- b) Following readings were noted during a test on a single cylinder 2-stroke diesel engine. Engine is motored by an electric motor and frictional power loss recorded on Wattmeter is 1.5 KW. Net brake load = 227 N, Diameter of Brake wheel = 100 cm, Engine Speed = 500 rpm , Fuel consumption = 2.04 Kg/ hr. Calorific value of fuel = 42000 KJ/kg .Find Mechanical efficiency and brake thermal efficiency.
- c) An engine develops a brake power of 26.2 KW. Following observations are made during a trial.
 - i. Power required to motor the engine = 4.5 KW
 - ii. Cooling water circulated = 7.5 Kg/ min.
 - iii. Specific heat capacity of Water = 4.187 KJ/kg k
 - iv. Petrol consumption = 200 gm/ min
 - v. Temperature rise of cooling water = 50 °C.
 - vi. If calorific value of petrol is 46000 KJ/kg, draw the heat balance chart for the test on KJ/Min basis.