

313312

12425

03 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

-
- 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.
(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following :** **10**
- a) Define the terms
 - i) Bore
 - ii) Stroke
 - b) State the functions of piston (any two)
 - c) Enlist any four requirements of fuel injection system.
 - d) Define the term carburetion.
 - e) State any four important elements of battery ignition system.
 - f) Draw labelled sketch of spark plug.
 - g) Enlist any two additives used in lubricating oil.

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) State any four applications of I.C. Engine.
 - b) Compare otto and diesel cycle on the basis of
 - i) same compression ratio and heat addition
 - ii) for same compression ratio and heat rejection
 - c) Describe constructional feature of connecting rod.
 - d) State any four requirements of ignition system.
- 3. Attempt any THREE of the following :** **12**
- a) Classify internal combustion engine on the basis of
 - i) no. of strokes
 - ii) fuel used
 - iii) type of cooling system
 - iv) speed
 - b) Describe with neat sketch simple carburettor.
 - c) Why firing order is provided to the multicylinder engines.
 - d) State the functions of following components
 - i) Oil filters
 - ii) Oil pump
 - iii) Pressure regulator
 - iv) Oil pressure gauge
- 4. Attempt any THREE of the following :** **12**
- a) Describe the constructional details of piston with neat sketch.
 - b) Draw a neat sketch of fuel injector and describe its working.
 - c) Describe battery ignition system with neat sketch.
 - d) Describe splash lubrication system with neat sketch.
 - e) “Improper lubricating oil reduces the life of Engine components”
justify your answer.

5. Attempt any TWO of the following : 12

- a) Describe cycle of operations in four stroke petrol engine with neat sketch.
- b) State the material used for following engine components.
 - i) piston pin
 - ii) cylinder head
 - iii) piston rings
 - iv) camshaft
 - v) push rod
 - vi) inlet valve
- c) Describe the working of S.U. Electrical fuel pump.

6. Attempt any TWO of the following : 12

- a) Describe the functional requirements of
 - i) Engine block
 - ii) Cylinder liner
 - iii) Gaskets
 - b) Describe the working of Mechanical governor.
 - c) State the working of pump circulation engine cooling system with neat sketch.
-