GBGS SCHEME

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Fourth Semester B.E. Degree Examination, Feb./Mar. 2022 **Automotive Engines**

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- a. Discuss the constructional details and working principle of four stroke Compression Ignition (CI) engine with a neat sketch. (10 Marks)
 - b. Write the comparison between:
 - i) Two stroke and Four stroke Engine
 - ii) Diesel and Petrol Engine

(10 Marks)

OR

- 2 a. Explain Four stroke spark ignition engines with a valve Timing diagram. (10 Marks)
 - b. Write short notes on:
 - i) Theoretical Otto cycle
 - ii) Theoretical Diesel cycle.

(10 Marks)

Module-2

3 a. List the components of Engine. Explain any four components with a suitable sketch.

(10 Marks)

b Discuss the Air fuel ratio requirements in spark ignition engines.

(05 Marks)

c. Write short notes on Gasoline Injection system.

(05 Marks)

OR

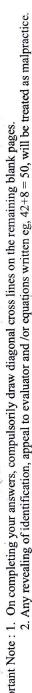
- 4 a. Explain the working of fixed type simple venture carburetor with a neat sketch. List its limitations. (10 Marks)
 - b. What are the different types of Nozzles used in fuel systems? Explain any three with a neat sketch. (10 Marks)

Module-3

- 5 a. List the Necessity of cooling. Explain the construction and working of pressurized water coding with a neat sketch. (10 Marks)
 - b. What do you mean by Antifreeze solutions? Explain different types of coolant. (10 Marks)

OR

- 6 a. Discuss any one lubricating systems with suitable sketch. State its advantages. (10 Marks)
 - b. What do you understand by Crank case ventilation? Explain positive crack case type with a neat sketch. (10 Marks)



Module-4

- 7 a. Define Supercharging. Discuss the different methods of supercharging with a neat sketch.
 - (10 Marks)

b. List the limitations of supercharging for petrol diesel engines.

(10 Marks)

OR

- 8 a. With a neat schematic diagram, explain the construction and working principle of Turbocharger, with intercooler. (10 Marks)
 - b. Write short notes on the effect of performance by Turbocharger.

(10 Marks)

Module-5

- 9 a. Explain the working principle of two stroke spark Ignition engine with symmetrical port timing diagrams. (10 Marks)
 - b. Write short notes on:
 - i) Scavenging process
 - ii) Preblow down and Blow down.

(10 Marks)

OR

- 10 a. List the different types of scavenging systems. Explain them with necessary sketches.
 - b. Write short notes on:
 - i) Port Design
 - ii) Scavenging pumps

(10 Marks)

(10 Marks)