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CBCS SCHEME

USN | | | | | | | | | | |

17AU44

Fourth Semester B.E. Degree Examination, June/July 2019
Automotive Engines

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Explain briefly the working principle of a 4 stroke S.I. Engine with neat sketches. **(12 Marks)**
b. What is an I.C. Engine? How are I.C. Engines classified? **(08 Marks)**

OR

2 a. Write the advantages and disadvantages of 2 stroke engines over 4 stroke engines. **(08 Marks)**
b. Explain the functions of any 4 engine components. **(12 Marks)**

Module-2

3 a. Define carburetion. What are the various requirements of a carburetor? **(08 Marks)**
b. What is the purpose of using compensating devices in carburetors? Mention the various compensating devices and explain any 2. **(12 Marks)**

OR

4 a. Explain the various functional requirements of diesel injection systems. **(08 Marks)**
b. What is a governor? What are its functions and types? **(04 Marks)**
c. What is a nozzle? What are its functions and list the types of nozzles used? **(08 Marks)**

Module-3

5 a. What is knocking? Explain the knocking phenomenon in S.I. Engines. **(08 Marks)**
b. Mention some of the requirements of S.I. Engine combustion chambers. **(04 Marks)**
c. Briefly explain any four factors that influence the flame speed in S.I. Engine combustion. **(08 Marks)**

OR

6 a. Explain the various stages of combustion in C.I. Engines. **(08 Marks)**
b. Briefly explain Direct and Indirect ignition chambers. **(04 Marks)**
c. Briefly explain the effect of various variables on delay period. **(08 Marks)**

Module-4

7 a. Explain the significance of cooling of an I.C. Engine. **(04 Marks)**
b. Compare the two significant methods of engine cooling. **(06 Marks)**
c. Explain thermostat cooling system with a neat sketch. **(10 Marks)**

OR

8 a. Explain the limiting factors for supercharging. **(04 Marks)**
b. Explain any two types of superchargers using relevant sketches. **(06 Marks)**
c. What are the effects of supercharging on engine thermodynamics? Explain using relevant P-V diagram. **(10 Marks)**

Module-5

9 a. Explain some of the important properties of S.I. engine and C.I. engine fuels. **(10 Marks)**

b. Explain the various constituents in the chemical structure of petroleum. **(10 Marks)**

OR

10 a. What are the functions of lubrication system? Explain some of the important properties of lubricants. **(10 Marks)**

b. Explain the working of pressure lubrication system with neat sketch. **(10 Marks)**

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