

**FACULTY OF ENGINEERING**  
**B.E. 2/4 (AE) II – Semester (Main) Examination, June 2014**

**Subject : Automotive Petrol Engines**

**Time : 3 hours**

**Max. Marks : 75**

**Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.**

**PART – A (25 Marks)**

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|----|--|---|
| 1  | Name the engine parts of an 1C engine which require lubrication.             | 2 |
| 2  | Explain the firing order for 4-cylinder and 6-cylinder in live IC engine.    | 3 |
| 3  | Differentiate between pre-ignition and detonation.                           | 2 |
| 4  | What are the different ways of rating an automobile battery?                 | 2 |
| 5  | Differentiate between wet sump and dry sump lubrication systems.             | 3 |
| 6  | What is the function of antifreeze solution? Name some antifreeze solutions. | 3 |
| 7  | What do you mean by scavenging in 2-stroke petrol engines?                   | 2 |
| 8  | Define flash point and fire point.   | 2 |
| 9  | Differentiate between constant choke and constant vacuum carburetor.         | 3 |
| 10 | How is homogeneous mixture of air fuel is achieved in SI engines? Explain.   | 3 |

**PART – B (50 Marks)**

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|----|---|---------------------------|
| 11 | a) Explain with suitable sketches the working of two stroke petrol engine.                                    | 5                         |
|    | b) Discuss the difference between ideal and actual value timing diagram of petrol engine.                     | 5                         |
| 12 | Explain with a neat sketch the working of MPFI system and state its merits.                                   | 10                        |
| 13 | a) Explain with a neat sketch the working of electronic ignition system.                                      | 5                         |
|    | b) Differentiate between i) Pre-ignition ii) Auto ignition iii) Detonation                                    | 5                         |
| 14 | a) Discuss three basic requirements of a good petrol engine combustion chamber.                               | 5                         |
|    | b) Explain the phenomenon of knocking in S1 engines. What are the different factors which influence knocking? | 5                         |
| 15 | a) Explain in detail wet sump lubrication system.   | 5                         |
|    | b) Explain the pressurized liquid cooling system used in automobiles.   | 5                         |
| 16 | a) Explain the working of a simple carburetor and state its limitations.                                      | 5                         |
|    | b) Explain the centrifugal spark advance mechanism.   | 5                         |
| 17 | Write short notes on the following :  |                           |
|    | a) Indicator diagram  | b) Crank case ventilation |
|    | c) Multigrade engine oils   | d) Ignition advance       |

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