

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 6**Subject Code: 03102380****Subject Name: Combustion and Emission Technology****Date: 09/05/2019****Time: 10:30am to 1:00pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (All are compulsory) (Each of one mark) **(15)**

1. Turbocharger is driven by using
(a) Engine Power (b) Engine Exhaust Gas (c) Motor (d) None of the above
2. CRDI systems use injection pressure of the order
(a) 100 – 200 bar (b) 200 – 400 bar (c) 400 – 600 bar (d) 1500 bar
3. For a four cylinder vertical engine the commonly used firing order is
(a) 1-2-3-4 (b) 3-4-1-2 (c) 1-3-4-2 (d) 4-3-2-1
4. Combustion in SI engine is
(a) Homogeneous (b) Heterogeneous (c) Both a & b (d) Laminar
5. In petrol engine compression ratio will normally vary from
(a) 1 to 2 (b) 6 to 10 (c) 11 to 15 (d) 16 to 20
6. Engine torque is highest at
7. Full form of DISC engine is
8. Full form of HCCI engine is
9. Full form of SCR is
10. Full form of EGR is
11. Full form of CRDI is
12. The compression ratio of CI engine is as compared to SI engine.
13. In stratified charge combustion engine, mixture used near spark plug is
14. Define ignition delay.
15. Define compression ratio.

Q.2 Answer the following questions. (Attempt any three) **(15)**

- A) Explain the working of turbocharger.
- B) Explain downsizing.
- C) Explain stages of combustion in CI engine.
- D) Explain classification of IC engine in detail.

Q.3 A) Explain stratified charge combustion engine. **(07)**

B) Explain working of catalytic convertor in detail. **(08)**

OR

B) Explain Exhaust Gas Recirculation with neat sketch. **(08)**

Q.4 A) Explain advantages and disadvantages of HCCI engine in detail. **(07)**

OR

A) Explain the control of direct injection gasoline engines with auto ignition combustion. **(07)**

B) Explain the phenomena of knocking **(08)**