

# Unit 5 - Week 4

## Course outline

How does an NPTEL online course work?

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Week 4

● Combustion in CI Engines and Carburetion - Part 01

○ Combustion in CI Engines and Carburetion - Part 02

○ Fuel Introduction Systems - Part 01

○ Fuel Introduction Systems - Part 02

○ Analysis of Carburetor - Part 01

○ Analysis of Carburetor - Part 02

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## Assignment 4

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2020-02-26, 23:59 IST.**

1) The phase of combustion in a CI engine that starts from the state of maximum cylinder pressure and ends at that of maximum cylinder temperature is called as

1 point

- Ignition delay period.  
 Period of rapid combustion.  
 Period of controlled combustion.  
 Period of after burning.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Period of controlled combustion.

2) Which one of the following statements is INCORRECT about knocking in CI engines?

1 point

- Knocking occurs in the initial stages of combustion.  
 Increasing the ignition delay decreases the chances of knocking.  
 Larger ignition delay results in more unburnt fuel at the start of combustion.  
 Knocking is characterized by pressure pulsations.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Increasing the ignition delay decreases the chances of knocking.

3) Which one of the following does not significantly affect the process of carburetion?

1 point

- Number of cylinders.  
 Engine speed.  
 Vapourization characteristics of fuel.  
 Temperature of intake air.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Number of cylinders.

4) Which one of the following statements is INCORRECT about mixture requirement in SI engines?

1 point

- A rich fuel-air mixture is required during idling.  
 A rich fuel-air mixture is required in the power range.  
 A lean fuel-air mixture is required for best fuel economy.  
 A rich fuel-air mixture is required during cruising.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
A rich fuel-air mixture is required during cruising.

5) The requirement by which injected fuel is broken down into smaller droplets is called

1 point

- vapourization.  
 atomization.  
 combustion.  
 oxidation.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
atomization.

6) Which one of the following is not a limitation of a simple carburetor?

1 point

- Poor atomization.  
 Poor vapourization.  
 No external energy spent for fuel pressurization.  
 Difficult to control over a wide range of operating conditions.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
No external energy spent for fuel pressurization.

7) The injection process by which fuel is introduced near each intake valve is called as

1 point

- port injection.  
 direct injection.  
 common rail injection.  
 in-cylinder injection.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
port injection.

8) The order of operating injection pressure (in bar) in gasoline direct injection is

1 point

- $10^{-1}$   
  $10^0$   
  $10^2$   
  $10^3$

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 $10^2$

9) In a carburetor, the speed of air reaches its maximum at the

1 point

- venturi throat.  
 choke valve.  
 throttle valve.  
 venturi inlet.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
venturi throat.

10) A rich fuel-air mixture is obtained during cold start by

1 point

- opening the choke valve.  
 closing the throttle valve.  
 opening the throttle valve.  
 closing the choke valve.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
closing the choke valve.

11) Which one of the following does not influence the mass flow rate of air in a simple carburetor?

1 point

- Area of the venturi throat.  
 Pressure of intake air.  
 Temperature of intake air.  
 Elevation difference between the top surface of fuel in the float chamber and the venturi throat.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Elevation difference between the top surface of fuel in the float chamber and the venturi throat.

12) For the same pressure drop ( $p_1 - p_2$ ) in a simple carburetor, which one of the following would not significantly influence the mass flow rate of fuel? **1 point**

- Area of the venturi throat.  
 Density of fuel.  
 Area of the fuel discharge nozzle.  
 Elevation difference between the top surface of fuel in the float chamber and the venturi throat.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Area of the venturi throat.