

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**FOURTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019**

**Course Code: AU204**

**Course Name: CI ENGINES AND COMBUSTION (AU)**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any three full questions, each carries 10 marks*

		Marks
1	a) Explain the properties of C.I. Engine fuels	4
	b) Define the Cetane number?	2
	c) Differentiate knocking phenomena in petrol and diesel engine?	4
2	a) Discuss the stages of combustion in C.I. Engine with P- $\theta$ diagram	5
	b) Mention the different types of combustion chambers in C.I Engines	5
3	a) What are the basic requirements of diesel injection systems?	5
	b) Describe different types of diesel injection system?	5
4	a) With neat sketch explain various types of fuel nozzles used in diesel fuel injection system	6
	b) Explain the different types of Air filters in C I engines	4

**PART B**

*Answer any three full questions, each carries 10 marks*

5	a) Draw a basic layout of EDC and briefly explain each sub systems	10
6	a) Briefly explain the working of Electronic Unit Injector (EUI).	10
7	a) How is flue gas analysis carried out by Orsat's apparatus?	6
	b) What is the significance of valve timing diagram?	4
8	a) What is a heat balance sheet for an engine?	4
	b) Explain the procedure for conducting the morse test on the I.C engines. Show the method of calculation of frictional power.	6

**PART C**

*Answer any four full questions, each carries 10 marks*

9	a) Explain the standard methods used for HC, CO. And CO <sub>2</sub> measurement	10
10	a) What are catalytic converters? How are they helpful in reducing HC, CO and NO <sub>x</sub> emissions.	10

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|----|----|---|----|
| 11 | a) | Explain the different pollutants from C I Engines and its Effects                       | 5  |
|    | b) | Explain the different types of cold starting devices used in C I Engines                | 5  |
| 12 | a) | Write short notes on Supercharging  | 3  |
|    | b) | What are the objectives of super –charging  | 3  |
|    | c) | Differentiate between super-charging and turbo charging                                 | 4  |
| 13 | a) | Explains the term turbo-charging and show the arrangements through a schematic diagram. | 5  |
|    | b) | Explain any two method of turbo charging  | 5  |
| 14 | a) | Explain any two types of governors used in C I Engines?                                 | 10 |

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