Reg. No. :

# **Question Paper Code: 39720**

### B.E. / B.Tech. DEGREE EXAMINATION, SEP 2020

Elective

#### Mechanical Engineering

#### 01UME920 - ADVANCED IC ENGINES

(Regulation 2013)

**Duration: One Hours** 

Maximum: 30 Marks

#### PART - A $(6 \times 1 = 6 \text{ Marks})$

#### (Answer any Six of the following Questions)

1. The cold engine is started, it requires a \_\_\_\_\_ mixture.

(a) leaner	(b) richer	(c) chemically equal	(d) none mentioned
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2. The air standard efficiency of an Otto cycle compared to diesel cycle for the given compression ratio is

(a) more (b) same (c) less (d) depending on power rating

- 3. The pressure at the end of compression in the case of diesel engine is of the order of
  - (a) 20 kg/cm (b) 6 kg/cm (c) 12 kg/cm (d) 35 kg/cm
- 4. Combustion in compression ignition engines is
  - (a) homogeneous (b) turbulent (c) heterogeneous (d) laminar

5. The following is not one of the major pollutants.

- (a) nitrogen oxides (b) carbon di-oxide
- (c) carbon monoxide (d) unburned hydro carbon
- 6. The major contributor of Carbon monoxide is
  - (a) motor vehicle (b) industry (c) stationary combustion (d) none of the above

7.	The advantage of gaseous fuel is that					
	(a) can be stored easily		(b) can mix easily with air			
	(c) can displace more air from the engine		(d) all of the mentioned			
8.	The C.I. engines alternative fuel most preferred are					
	(a) aromatics	(b)olefins	(c) napthenes	(d) paraffins		
9.	The most accurate gasoline injection system is					
	(a) direct injection	(b)throttle injection	(c) port injection	(d) manifold injection		
10.	. The effective inhibitor of pre-ignition is					
	(a) alcohol	(b) lead	(c) water	(d) none mentioned		

## PART– B (3 x 8= 24Marks)

## (Answer any three of the following Questions)

11.	Explain the various stages of combustion in a SI engine with a P- $\theta$ diagram.	(8)
12.	Explain the process of combustion in CI engine.	(8)
13.	What are the interpretations drawn from percentage of HC, CO, CO2 and O2 from engine exhaust.	(8)
14.	Give a brief account of LPG being used as an alternate fuel in SI engine	(8)
15.	Discuss the operation of gasoline direct injection system with a block diagram showing clearly all the sensors.	(8)