## Exam Seat No:\_\_\_\_\_ C.U.SHAH UNIVERSITY Winter Examination-2018

## Subject Name : Alternate Fuels and Engines

	Subject Code : 4TE07AFE1			Branch: B.Tech (Automobile)		
	Semest	er :7	Date : 29/11/2018	Time : 10:30 To 01:30	Marks: 70	
	<ul> <li>Instructions:</li> <li>(1) Use of Programmable calculator &amp; any other electronic instrument is prohi</li> <li>(2) Instructions written on main answer book are strictly to be obeyed.</li> <li>(3) Draw neat diagrams and figures (if necessary) at right places.</li> <li>(4) Assume suitable data if needed.</li> </ul>					
Q-1		Attem	pt the following questions:			(14)
	a)	What i	is the full form of DME?			
	b)	What i	is the range of octane number of	f CNG?		
	c)	Define	e calorific value.			
	d)	What l	by product generated when bio	diesel is produced?		
	e)	Define	e fire point of a fuel.			
	f)		cid, nickel cadmium, nickel irc ry, solar cell, car)	on are types of		
	g)	From BS - 6	-	of emission is implemented. (B	S - 3, BS - 4,	
	h)	B30 m	eans% of biodiesel blend i	n total fuel.( 70,30,100)		
	i)	C2H50	OH is the chemical formula of_	( ethylene, methan	ol, ethanol)	
	j)	Write	the common feedstock for prod	luction of biodiesel.		
	k)	To me	asure flash point of fuel which	equipment is utilized?		
	l)	Sugarc ethano	_	rce for production of	( coal, petrol,	
	m)	Toyota	a Camry has a hybrid version.	Frue or false.		
	n)	Hybric	l car uses both engine and elect	tric motor. True or false.		
Atte	empt any	four que	estions from Q-2 to Q-8			

## Q-2 Attempt all questions



	(a)	What is the need of alternative fuels? Discuss the barriers in implementing alternative fuels in India.	07
	<b>(b)</b>	Describe properties & production process of methanol.	07
Q-3		Attempt all questions	
	<b>(a)</b>	Discuss production and storage of hydrogen.	07
	<b>(b)</b>	Explain construction and working of Wankel engine with neat sketch	07
Q-4		Attempt all questions	
	<b>(a)</b>	Explain the production process of ethanol with reaction process.	07
	(b)	Explain Stirling engine with necessary sketches.	07
Q-5		Attempt all questions	
	<b>(a)</b>	Explain solar powered vehicle with suitable sketch.	07
	<b>(b)</b>	Explain biodiesel production process.	07
Q-6	Attempt all questions		
	<b>(a)</b>	With neat sketch discuss construction and working of electric vehicle.	07
	<b>(b)</b>	Discuss Multi fuel/duel fuel engine.	07
Q-7		Attempt all questions	
	<b>(a)</b>	Explain different components of CNG conversion kit with suitable sketches.	07
	<b>(b)</b>	Discuss Eco friendly plastic fuels(EPF)	07
Q-8		Attempt all questions	
	(a)	Explain series type & parallel type hybrid electric vehicle with neat schematic diagrams.	07
	<b>(b)</b>	Write a short note LPG as a fuel in vehicle.	07

