

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name: Internal Combustion Engines

Subject Code: 4TE05ICE1

Branch: B.Tech (Mechanical)

Semester: 5

Date: 23/03/2018

Time: 10:30 To 01:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1	Attempt the following questions:	(14)
	a) Mention three main function of a piston.	01
	b) Why inlet valve opens before starting the suction stroke?	01
	c) What are L-head and T-head engines?	01
	d) What is the function of float chamber used in carburettor?	01
	e) What is specialty of pintaux nozzle?	01
	f) How the combustion is started in diesel engine?	01
	g) Why antifreeze solution is added in the cooling water?	01
	h) What is the need of cooling system?	01
	i) Write down the firing order of 4cylinder engines.	01
	j) Which are the methods of measurement of brake power?	01
	k) Define term Indicated Power.	01
	l) What is blow by action?	01
	m) Which are the methods of turbo charging?	01
	n) What are the objectives of supercharging?	01

Attempt any four questions from Q-2 to Q-8

Q-2	Attempt all questions	(14)
	(a) Explain SU carburettor with neat sketch.	(7)
	(b) Write a short note on stratified charge engine with neat sketch.	(7)
Q-3	Attempt all questions	(14)
	(a) Explain P-θ diagram in C.I. engines.	(6)
	(b) Which information getting from the valve timing diagram? Sketch and explain valve timing diagram of four stroke petrol engine.	(6)
	(c) Explain D-MPFI system.	(2)
Q-4	Attempt all questions	(14)
	(a) Explain briefly with neat sketch different types of nozzle.	(5)



- (b) What is pre-ignition? Compare Knocking in S.I and C.I engines. (4)
(c) Write notes on properties of coolant and anti-freeze solution? (5)
- Q-5** **Attempt all questions** (14)
(a) Classify various lubrication systems. Explain with a neat sketch the splash lubrication system. (7)
(b) Write short note on magneto ignition system with neat sketch. (7)
- Q-6** **Attempt all questions** (14)
(a) Write a short note on three way catalytic converter with neat sketch. (7)
(b) What are the purposes of supercharging the I.C. Engine? Classify types of superchargers and explain any one of them. (7)
- Q-7** **Attempt all questions** (14)
(a) Effect of different pollutants on human and plant life. (7)
(b) Explain any one method for measurement of brake power of an engine with neat sketch. (7)
- Q-8** **Attempt all questions** (14)
(a) Discuss Heat balance sheet for four stroke CI engine. (7)
(b) Explain measurement of indicated power of multi cylinder engine by Morse test. (7)

