ANJUMAN-I-ISLAM'S

KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

Symbol of Secularism & National Integration

DEPARTMENT OF MECHANICAL ENGINEERING

CLASS:- T.E. M.E 1 and 2	SEM:- V
SUBJECT:- I.C.E	DATE:- **24 / 10 / 2016**
DURATION:- **60 min.**	MARKS:- **20**

CLASS TEST 02

	Q.01 Attempt any two: (08 Marks)	marks	CO
a)	Explain types of nozzles used in CI Engines	**04**	**7**
b)	Explain working of CRDI System.	**04**	**6**
c)	Write a short note on different types of turbocharging.	**04**	**2**

	Q.02 Attempt any one: (12 Marks)		
a)	During a trial of a single cylinder oil engine working on dual cycle, the following observations were made:Compression ratio = 15,Oil consumption 10.2 kg/h,Calorific value of fuel= 43890 kJ/kg,Air consumption = 3.8 kg/min,Speed = 1900r.p.m.,Torque on the brake drum=186 N-m,Quantity of cooling water used=15.5kg/min,Temperature rise of cooling water = 36 degree C,Exhaust gas temperature = 410 degree C,Room temperature = 20 degree C,C_P for exhaust gases 1.17 kJ/kg K,Calculate: (i) Brake power, (ii) Brake specific fuel consumption, and(iii) Brake thermal efficiency.(iv) Also draw heat balance sheet on minute basis.	**12**	**3**
b)	During a trial on 4 cylinders four stroke engine coupled to hydraulic dynamometer,the following readings were recorded.Brake power with all cylinder working =14.7kw,Brake power with cylinder 1 cut off =10.14kw,Brake power with cylinder 2 cut off =10.3kw,Brake power with cylinder 3 cut off=10.36 kw,Brake power with cylinder 4 cut off= 10.21kw,Petrol consumption 5.5 kg/hr,Calorific Value of petrol=42000 kJ/kg,Dia of cylinder=8 cm,stroke of piston =10 cm.clearance volume =0.1 litre,Calculate 1] Mechanical efficiency 2] Air standard efficiency 3] Indicated thermal efficiency,4] Brake thermal efficiency	**12**	**3**