Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. IST Semester–Remedial Examination – July- 2011

Subject code: 711102N

Subject Name: Fundamentals of I.C. Engine and Automobile

Date:08/07/2011 **Time: 10:30 am – 01:00 pm**

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Write comparison of actual cycle and air fuel cycle	**07**
	(b)	Explain with a neat sketch the valve timing diagram for 4 -stroke petrol engine	**07**
Q.2	**(a)**	Explain with a neat sketch the scavenging process in 2-stroke engine	**07**
	(b)	Explain use of combustion charts for cycle analysis	**07**
		OR	
	(b)	For actual cycle explain 1) Exhaust Blow-down loss 2) Pumping loss	**07**
Q.3	**(a)**	Write design procedure to determine the dimensions of cross-section of the connecting rod.	**07**
	(b)	Explain selection of material for piston and write design procedure to design piston head	**07**
		OR	
Q.3	**(a)**	Draw neat sketch of arrangement for steering linkage. Explain briefly with a neat sketch the worm and worm-wheel type steering gear	**08**
	(b)	Explain briefly the working of telescopic type hydraulic shock absorber	**06**
Q.4	**(a)**	Explain working of stratified charge engine	**09**
	(b)	What is the effect of percentage change in the efficiency of otto cycle having a compression ratio of 7, if the specific heat at constant volume is increased by 1%	**05**
		OR	
Q.4	**(a)**	Explain with a neat sketch the working of constant mesh gearbox	**07**
	(b)	Draw typical layout of an electrical system of an automobile and explain it briefly	**07**
Q.5	**(a)**	Explain briefly the mixture requirements for steady state operation in S.I. Engine	**07**
	(b)	Explain with a neat sketch the compensating jet device used in carburettor	**07**
		OR	
Q.5	**(a)**	Draw a schematic diagram of helix bypass type Bosch fuel pump and explain its working	**09**
	(b)	Explain the concept of multipoint fuel injection system	**05**

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