

2006 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

IV B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS
IC ENGINE
(MECHANICAL ENGINEERING)

APRIL/MAY 2006

TIME 3 HOURS
MARKS: 80

Answer any **FIVE** Questions
All Questions carry equal marks

1. (a) Why do you need ignition in i.c. engines? Discuss the types of ignition employed.
(b) Explain any method of fuel introduction with a neat schematic.
2. (a) Explain the term flame speed in engine combustion.
(b) Discuss as to how very low flame speed and very high flame speed influence engine combustion and performance.
3. (a) What are the function of venturi, and float in a carburetor.
(b) What are the function of an economizer and an accelerating pump in a carburetor?
4. (a) Compare the advantages and disadvantages of induction swirl compression swirl.
(b) What are the advantages and disadvantages of the direct injection combustion chamber?
5. (a) What are the various types of supercharging?
(b) Explain three of them enumerating their field of applications.
6. A single cylinder gas engine, having a bore and stroke of 250mm and 500 mm respectively and running at 240 rpm. fires 100-times/ minute. The quantity of coal gas used is 0.3 m³ per minute at 100 cm of water (pressure) at 170C. While the amount of air used is 3 kg/min. Assuming that an extra volume of air is taken during a missed cycle equal to that of a coal gas normally taken in, if both are measured at NTP, find
(a) The charge of air per working cycle as measured at NTP
(b) The volumetric efficiency.
7. (a) How the engine must be maintained to reduce smoky exhaust?
(b) What are the potential health hazards of particulate emission?
8. Briefly explain the procedure for the production of gobar gas?