

N-Scheme Model Examination Question PaperTime : Three hours(Maximum Marks : 100)

- [N.B: (1) For Part - A. Answer All Questions. All question carry equal marks. (10x3 = 30)
(2) For Part - B. Answer all questions by choosing either A or B. (5 x 14 = 70)]

PART - A**(10x3 = 30)**

1. State the first law of thermodynamics
2. Define Indicated Power.
3. Define specific heat capacity.
4. Draw P-V diagram of otto cycle.
5. Define brake thermal efficiency of IC engine.
6. What are the requirements of air fuel mixture.
7. What are the advantages of magneto ignition system?
8. What is meant by capacitive discharge ignition?
9. Compare battery and distributor less ignition system?
10. Write the limitations of turbo charger.

PART - B**(5x14 = 70)**

11. (a) (i) Name the different types of thermodynamic processes and explain the constant pressure process with a help of P-V and T-S diagram. (7)
- (ii) Discribe the diesel cycle with a help of P-V diagrams. (7)
- (or)
- (b) (i) Write about the following thermodynamic terms. (7)
- 1) Intensive and extensive properties
 - 2) Point and path functions
- (ii) Describe the Stirling cycle with the help of P-V diagrams. (7)

22. (a) (i) Compare petrol and diesel engine
 (ii) Explain the working of four stroke petrol engine with neat sketch. (7)
 (or)
 (b) (i) Write the IC engine heat balance sheet procedure. (7)
 (ii) The following results were obtained during the Morse test on a four stroke cycle petrol engine. BP = 11.92 kw, $BP_1 = 8.46$ kw, $BP_2 = 8.60$ kw, $BP_3 = 8.54$ kw, $BP_4 = 8.50$ kw, $CV = 42000$ KJ/Kg. and $FC = 3.5$ kg / hr. Find indicated power and mechanical efficiency. (7)
23. (a) (i) Explain the working principle of mechanical fuel pump with a neat sketch. (7)
 (ii) Explain electronic petrol injection system with a neat sketch. (7)
 (or)
 (b) (i) Describe the working of solex carburettor with a neat sketch. (7)
 (ii) Explain the working principle of pneumatic governor with a neat sketch. (7)
24. (a) (i) Explain the magneto coil ignition system with neat sketch. (7)
 (ii) Briefly explained the battery coil ignition system with neat sketch. (7)
 (or)
 (b) (i) What are the factors affecting the angle of advance and its effects. (7)
 (ii) Describe computer control coil ignition system with neat sketch. (7)
25. (a) (i) Explain the working of forced cooling system with neat sketch. (7)
 (ii) Explain the pressure feed lubrication systems with neat sketch. (7)
 (or)
 (b) (i) Explain the working of crankcase ventilation system. (7)
 (ii) Explain the working of superchargers with help of thermodynamic cycle. (7)