

- Q.26 Differentiate between open system and closed system. (CO-5)  
 Q.27 Explain characteristics gas equation. (CO-6)  
 Q.28 Define fuel and write its constituents. (CO-9)  
 Q.29 Write the advantages of single stage compression. (CO-10)  
 Q.30 Explain the working of Supercharger. (CO-10)  
 Q.31 Explain multy stage reciprocating air compressor with help of suitable, example. (CO-10)  
 Q.32 Explain two types of air compressor.  
 Q.33 Explain pascal's law.  
 Q.34 Explain First and Second Law of thermodynamics.

#### **SECTION-D**

**Note :** Long Answer type question. Attempt any two questions. (2x10=20)

- Q.35 Explain Diesel cycle with PV and TS diagram and write different operations involved in it. (CO-8)  
 Q.35 Explain construction and working of centrifugal pump with neat diagram. (CO-4)  
 Q.36 If 71 of an petrol weighs 4.5N, calculate Specific weight, Mass density & specific volume. (CO-1)

No. of Printed Pages : 4  
Roll No.....

120332

#### **3rd Sem./Automobile Engg Subject : Elements of Mechanical Engineering**

Time : 3 Hrs.

M.M. : 100

#### **SECTION-A**

Note : Multiple choice questions. All questions are compulsory. (10x1=10)

- Q.1 An envelope which separates the system from surroundings is called as ..... (CO-5)  
 A) Merge                      b) Limit less  
 C) Boundary                d) None of these  
 Q.2 Write the SI unit of specific weight (CO-1)  
 A) Newton per metre cube  
 b) Newton metre  
 C) Newton  
 D) All of these  
 Q.3 Entropy of the universe remains ..... (CO-1)  
 a) Variable                b) Note constant  
 c) Constant                d) All of these  
 Q.4 The pressure below gauge pressure is known as ..... (CO-2)  
 A) Absolute pressure    b) Vacuum pressure

- c) Both A & B      d) Atmospheric pressure
- Q.5** Bourdon tube pressure gauge is used for measuring \_\_\_\_\_ pressure. (CO-2)
- Gauge & Vacuum pressure
  - Vacuum pressure
  - absolute pressure
  - Gauge pressure
- Q.6** Turbulent flow is non\_\_\_\_\_ (CO-3)
- Steady flow
  - Uniform flow
  - stream line flow
  - all of these
- Q.7** Centrifugal pump convert pressure through \_\_\_\_\_ force. (CO-4)
- Centrifugal force
  - Centripetal force
  - Both A & B
  - None of these
- Q.8** Loss of heat occurs in \_\_\_\_\_ process. (CO-5)
- Constant pressure
  - Reversible
  - Constant volume
  - irreversible
- Q.9** In Isobaric process pressure remains \_\_\_\_ (CO-7)
- Constant
  - Variable
  - Both A & B
  - None of these
- Q.10** Carnot cycle is an \_\_\_\_\_. (CO-8)
- Variable cycle
  - Constant process
  - Ideal cycle
  - All of these

## SECTION-B

- Note :** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Define specific mass. (CO-1)
- Q.12 Define surface tension. (CO-1)
- Q.13 Name any two pressure measuring devices. (CO-2)
- Q.14 Define pressure head. (CO-2)
- Q.15 Define Non uniform Flow. (CO-3)
- Q.16 Define Turbulent flow. (CO-3)
- Q.17 Write main components of reciprocating pump. (CO-4)
- Q.18 Define hydraulic Ram. (CO-4)
- Q.19 Define Entropy. (CO-5)
- Q.20 Define Charle's law. (CO-6)

## SECTION-C

- Note :** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Explain the relation between specific weight and mass density. (CO-1)
- Q.22 Explain about mechanical pressure gauge. (CO-2)
- Q.23 Differentiate between Steady and Un-Steady flow. (CO-3)
- Q.24 Explain Bernoulli's equation. (CO-3)
- Q.25 Explain hydraulic brake. (CO-4)