

- Q.27 Describe the working of Reciprocating Compressor. (CO2)
- Q.28 Define Surface tension and Specific gravity. (CO1)
- Q.29 Explain Rate of flow and its unit. (CO1)
- Q.30 Explain briefly Continuity equation. (CO3)
- Q.31 State the applications of pneumatics. (CO2)
- Q.32 Differentiate between heat and work. (CO1)
- Q.33 Differentiate between heat pump and refrigerator. (CO2)
- Q.34 What is U-tube manometer? How will you measure vacuum pressure? (CO3)
- Q.35 Define Mass density and Specific weight. (CO1)

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain the Construction and Working of Reciprocating pump with the help of neat sketch. (CO2)
- Q.37 Explain Diesel Cycle with P-V and T-S diagrams (CO3)
- Q.38 Write short note on the following: (CO1&2)
- Throttling and free expansion thermodynamic process.
 - Description of hydraulic accumulator.

No. of Printed Pages : 4

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Roll No.

3rd Sem / Auto

Subject:- Basics of Thermodynamics , Hydraulics & Pneumatics

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 The SI unit of characteristics gas constant is (CO2)
- J/kg
 - J/K/mol
 - J/kgk
 - KJ/kg
- Q.2 The Envelope which separates the thermodynamic system from surroundings is known as (CO1)
- Boundary
 - Universe
 - State
 - Process
- Q.3 A system which consists of single phase is known as (CO1)
- Heterogeneous system
 - Open system
 - Closed system
 - Homogeneous system
- Q.4 Manometer is used to measure (CO3)
- Velocity at a point in a fluid
 - Discharge of liquid
 - Pressure at a point in a fluid
 - All of the above

- Q.5 Mercury is used for _____ pressure range. (CO2)
 a) High b) Low
 c) Sensitive d) None of above
- Q.6 First law of thermodynamics deals with (CO1)
 a) Conservation of energy
 b) Conservation of mass
 c) Conservation of force
 d) Conservation of momentum
- Q.7 Surface Tension of a liquid (CO2)
 a) Increases with area
 b) Decreases with temperature
 c) Increases with temperature
 d) Decreases with area
- Q.8 Pneumatic system usually do not exceed (CO3)
 a) 1 hp b) 1 to 2 hp
 c) 2 to 3 hp d) 4 to 5 hp
- Q.9 Hydraulics is related to use of (CO1)
 a) Liquid b) Gas
 c) Both (a) & (b) d) None of the above
- Q.10 Which of the following quantity is dimensionless - (CO1)
 a) Specific gravity b) Specific Volume
 c) Mass Density d) Specific weight

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SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Boyle's law is applicable when pressure is kept constant (True/False) (CO2)
- Q.12 SI unit of Surface tension is Newton per metre (True/False) (CO2)
- Q.13 Pneumatic system is operated by _____ (CO2)
- Q.14 The first law of thermodynamics is based upon law of conservation of energy. (True/False) (CO1)
- Q.15 An envelope which separates the system from surroundings is called as _____ (CO5)
- Q.16 What is cycle? (CO1)
- Q.17 Define Closed system. (CO1)
- Q.18 Air is compressible. (True/False) (CO1)
- Q.19 Define non uniform flow. (CO2)
- Q.20 What do you mean by viscosity. (CO1)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Differentiate between Screw pump and gear pump. (CO2)
- Q.22 Explain Bernoulli's theorem. (CO1)
- Q.23 Give classification of air compressors. (CO2)
- Q.24 What are the limitations of 1 law of Thermodynamics. (CO3)
- Q.25 Describe Vander-wall's equation. (CO2)
- Q.26 Explain second law of thermodynamics. (CO3)

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