

- Q.29 Define Fuel and its types.
 Q.30 Explain the working of Turbocharger.
 Q.31 Explain the components of Automobile air conditioning system.
 Q.32 Write the uses of Compressed air.
 Q.33 Explain the different properties of Fuel.
 Q.34 Draw the P-V diagrams of Otto cycle.
 Q.35 Explain Rate of flow and its units.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 If 15 m^3 of an oil weights 75 KN, calculate
 i) Specific weight
 ii) Mass density
 iii) Specific gravity
 Q.37 Explain the construction and working of Centrifugal pump with the help of neat sketch.
 Q.38 Explain Dual Cycle with PV and TS diagram.

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3rd Sem / Branch : Automobile Engineering Subject:- Elements of Mechanical Engineering

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 SI unit of Surface Tension
 a) Kg/m^3 b) N/m
 c) Nm d) None of the above
 Q.2 Manometer is used to measure
 a) Velocity
 b) Pressure at a point in a fluid
 c) Density
 d) None of the above
 Q.3 If the fluid particles move in zig-zag way, the flow is
 a) Laminar flow b) Turbulent flow
 c) Steady flow d) All of the above
 Q.4 The SI unit of Discharge
 a) m/s b) m^2/s
 c) m^3/s d) Nm
 Q.5 Hydraulic Press works on the principle of

- a) Water hammer b) Centrifugal action
c) Reciprocating action d) Pascal law
- Q.6 Pressure is an _____ property of system
a) Intensive b) Extensive
c) System d) None of the above
- Q.7 Boyle's law is applicable when _____ is constant
a) Pressure b) Volume
c) Temperature d) None of the above
- Q.8 Constant Pressure Process is also known as
a) Isobaric process b) Isochoric process
c) Isothermal process d) None of the above
- Q.9 Otto Cycle is known as
a) Constant volume cycle
b) Constant pressure cycle
c) Constant entropy cycle
d) None of the above
- Q.10 Wood, Coal etc. are _____ fuels
a) Primary fuel b) Secondary fuel
c) Artificial fuel d) All of the above

SECTION-B

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

- Q.11 State the SI unit of Mass Density.
Q.12 Specific Volume is reciprocal of _____

- Q.13 Piezometers measures _____ pressure only.
Q.14 The Absolute pressure is equal to Gauge pressure + Atmospheric pressure (true/false)
Q.15 If the fluid particle moves in zig-zag way, then flow is called _____
Q.16 The SI unit of Discharge is _____
Q.17 Bernoulli's theorem deals with the law of Conservation of energy (true/false)
Q.18 Charle's law is applicable when _____ kept constant.
Q.19 Density is an Intensive property (true/false)
Q.20 Coal is an example of solid fuel (true/false)

SECTION-C

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

- Q.21 Define Fluid and its types.
Q.22 Define Mass density and specific gravity.
Q.23 Explain U tube Manometer with diagram.
Q.24 Describe Continuity equation.
Q.25 Define Steady flow and Unsteady flow.
Q.26 Explain the working of Hydraulic Ram with diagram.
Q.27 Explain Charle's law.
Q.28 Explain Zeroth law of thermodynamics.