

- Q.20 A container of volume  $4\text{m}^3$  has 80KN of oil. Find the Specific Weight and Mass density.
- Q.21 Write assumptions of Bernoulli's Theorem. Also, mention its two applications.
- Q.22 Explain :
- Absolute Pressure
  - Vacuum Pressure

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)
- Q.23 Explain the construction and working of Centrifugal pump.
- Q.24 Explain the working of Hydraulic circuits using sequence valves and counter balance valves.
- Q.25 Explain the principle and working of Venturi meter with the help of a neat diagram.

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### 3rd Year / Advance Diploma in Tool and Die Making

#### Subject : Hydraulics and Pneumatics

Time : 3 Hrs.

M.M. : 60

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

- Q.1 Stokes in the unit of-
- Mass Density
  - Weight Density
  - Dynamic Viscosity
  - Kinematic Viscosity
- Q.2 Mercury does not wet the glass due to the property of
- Adhesion
  - Cohesion
  - Surface Tension
  - Viscosity
- Q.3 Bernoulli's Theorem deals with the Law of Conservation of
- Mass
  - Energy
  - Momentum
  - None of the above

- Q.4 Priming of the pump is done in order to
- a) Run the pump satisfactorily
  - b) Completely fill the impeller and casing
  - c) Remove the air from the impeller and casing
  - d) All of the above

- Q.5 Air compressors are
- a) Air cooled
  - b) Water cooled
  - c) Both (a) & (b)
  - d) Does not require cooling

- Q.6 A pressure relief valve can be
- a) Direct operated      b) Pilot operated
  - c) Solenoid operated    d) All of the above

### SECTION-B

**Note:** Objective/ Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 Define Capillarity.
- Q.8 What is 'Slip' in reciprocating pump.
- Q.9 Orifice meter is used to measure \_\_\_\_\_ of liquid through a pipe.

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- Q.10 Actuators controls the function of generator. (True/False)
- Q.11 Vacuum Pressure is measured \_\_\_\_\_ the atmospheric pressure. (above/below)
- Q.12 Define Non-uniform Flow.

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

- Q.13 Write a short note on Vane Pump.
- Q.14 Explain the working of Hydraulic Press.
- Q.15 What are Newtonian and Non-Newtonian fluids? Also give their examples.
- Q.16 Explain multistage centrifugal pumps with diagram.
- Q.17 The reading of a barometer is found to be equal to 10m of water. What will be the value of atmospheric pressure in terms of metre of mercury? (Take density of mercury = 13600 kg/m<sup>3</sup> and of water = 1000 kg / m<sup>3</sup>)
- Q.18 Mention the types of Pneumatic Actuators and their applications.
- Q.19 Explain the working of Cam operated flow control valves.

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