

# **MODEL QUESTION PAPER**

**DSA3/DSM3**

## **III Semester DIPLOMA Examination, August 2011 FLUID MECHANICS**

Time: 3 Hours

Max. Marks: 75

### **GROUP A : Answer any three questions.**

- Q.1 Why priming is important in centrifugal pump.
- Q.2 Why a heavy liquid such as mercury is preferred as manometer liquid.
- Q.3 Explain the working of centrifugal pump with neat sketch. Why priming is important in centrifugal pumps?
- Q.4 With the help of neat sketch explain the working of a Francis turbine.
- Q.5 State the advantages and disadvantages of pneumatic system.

### **GROUP B : Answer any three questions.**

- Q.6 Describe the different types of manometers.
- Q.7 Explain the double acting cylinder with metering – out control.
- Q.8 Explain briefly about different types of pumps with a neat sketch.
- Q.9 What is meant by pressure head?
- Q.10 How the hydraulic pumps are classified?

### **GROUP C : All Questions are Compulsory.**

#### **Q.11 Fill in the blanks**

- (i) A positive displacement pump \_\_\_\_\_ the fluid pressure.
- (ii) A Flow whose streamline may be represented by a straight-line flow is known as \_\_\_\_\_.
- (iii) \_\_\_\_\_ is also known as positive displacement pumps.
- (iv) A Flow in which the velocities of liquid particles at all sections of the pipe are equal is called \_\_\_\_\_.
- (v) \_\_\_\_\_ is used to measure pressure at a point as pressure difference between two points in the system in terms of head of liquid.

#### **Q.12 Multiple choice question.**

- (i) The absolute pressure is equal to \_\_\_\_\_.
  - (a) Atmospheric pressure + gauge pressure
  - (b) Gauge pressure + vacuum pressure
  - (c) Atmospheric pressure + vacuum pressure
  - (d) Absolute pressure + gauge pressure
- (ii) \_\_\_\_\_ is mixed flow type of reaction turbine.
  - (a) Free jet turbine
  - (b) Francis turbine

- (c) Kaplan turbine (d) None of these
- (iii) The stream of liquid issuing from a nozzle is known as \_\_\_\_\_.  
(a) Path (b) Flow  
(c) Jet (d) Line
- (iv) A flow, in which the quantity of liquid flowing per second is constant.  
(a) Uniform flow (b) Unsteady flow  
(c) Steady flow (d) No uniform flow
- (v) It is used to measure the discharge in a pipe \_\_\_\_\_.  
(a) Centrifugal Pump (b) reciprocating pump  
(c) Venturimeter (d) Manometer

**Q.13 True or false.**

- (i) The pneumatic valves are playing a major role in the pneumatic system.
- (ii) A flow whose streamline may be represented by a straight line  
Flow is known as two dimensional flows.
- (iii) Turbine converts the hydraulic energy of water into heat energy.
- (iv) DCV means direction control valve.
- (v) Gauge pressure is the pressure exerted by the air on the earth's surface.

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